

Section 3 Background Research

Construction Phase I of the HHCTCP traverses two distinct geographic areas. This discussion of the project area’s cultural history includes the inland southwestern Honouliuli Ahupua‘a lands that were, as a generalization, relatively barren and little used prior to being placed under a century of sugar cane cultivation, and the Hō‘ae‘ae, Waikele, Waipi‘o, and Waiawa Ahupua‘a lands on the margins of Pearl Harbor that were much more intensively used in traditional Hawaiian times and that have continued under fairly intensive habitation to the present time. Figure 10 shows the boundaries of the *ahupua‘a* traversed by the project area.

3.1 Mythological and Traditional Accounts

3.1.1 Honouliuli Ahupua‘a

3.1.1.1 Traditions of Hawaiian Gods and Demi-gods

The traditions of Honouliuli Ahupua‘a have been compiled by several authors, in studies by Sterling and Summers (1978), Hammatt and Folk (1981), Kelly (1991), Charvet-Pond and Davis (1992), Maly (1992), and Tuggle and Tomonari-Tuggle (1997). Some of the traditional themes associated with this area include connections with *Kahiki*, the traditional homeland of Hawaiians in central Polynesia. There are several versions of the chief Kaha‘i leaving from Kalaeloa for a trip to Kahiki; on his return to the Hawaiian Islands he brought back the first breadfruit (Kamakau 1991a:110) and planted it at Pu‘uloa, near Pearl Harbor in ‘Ewa (Beckwith 1940:97). Several stories associate places in Honouliuli to the gods Kāne and Kanaloa, with the Hawaiian pig god Kamapua‘a and the Hina family, and with the sisters of Pele, the Hawaiian volcano goddess, all of whom have strong connections with Kahiki (Kamakau 1991a:111; Pukui et al. 1974:200). The collection of myths and traditions presented in this section focus on the central portion of Honouliuli Ahupua‘a, in areas near the HHCTCP Construction Phase I project area, and areas near Pearl Harbor.

3.1.1.2 The Naming of Honouliuli

Honouliuli is the largest *ahupua‘a* in the *moku* (district) of ‘Ewa. One translation of the name for this district is given as “unequal” (*Saturday Press*, Aug. 11, 1883). Others translate the word as “strayed” and associate it with the legends of the gods Kāne and Kanaloa:

When Kane and Kanaloa were surveying the islands they came to Oahu and when they reached Red Hill saw below them the broad plains of what is now Ewa. To mark boundaries of the land they would throw a stone and where the stone fell would be the boundary line. When they saw the beautiful land lying below them, it was their thought to include as much of the flat level land as possible. They hurled the stone as far as the Waianae range and it landed somewhere, in the Waimanalo section. When they went to find it, they could not locate the spot where it fell. So Ewa (strayed) became known by the name. The stone that strayed. [Told to E.S. by Simeon Nawaa, March 22, 1954; cited in Sterling and Summers 1978:1]

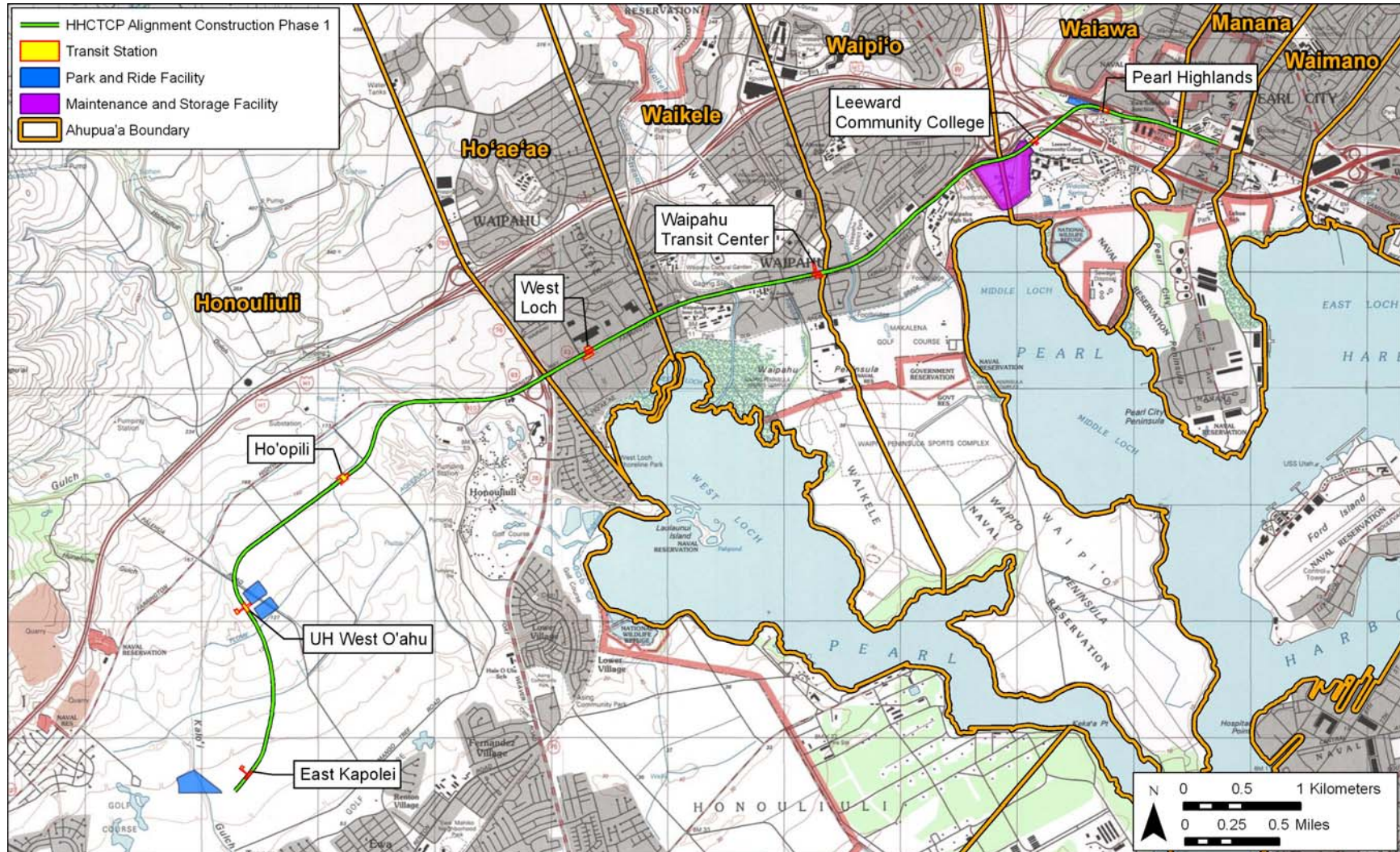


Figure 10. U.S. Geological Survey 7.5-Minute Series Topographic Map, Ewa (1998), Pearl Harbor (1999), Schofield Barracks (1998), and Waipahu (1998) Quadrangles, showing the boundaries of the *ahupua'a* traversed by the project area

Honouliuli means “dark water,” “dark bay,” or “blue harbor,” and was named for the waters of Pearl Harbor (Jarrett 1930:22), which marks the eastern boundary of the *ahupua'a*. The Hawaiians called Pearl Harbor, Pu'uloa (*lit.* long hill). Another explanation for the names comes from the “Legend of Lepeamoa,” the chicken-girl of Pālama. In this legend, Honouliuli is the name of the husband of the chiefess Kapālama and grandfather of Lepeamoa. The land of Honouliuli was named for the grandfather of Lepeamoa (Westervelt 1923:164-184).

It is likely that the boundaries of the western-most *ahupua'a* of 'Ewa were often contested with people of the neighboring Wai'anae District. The 'Ewa people could cite divine sanction that the dividing point was between two hills at Pili o Kahe:

This is a spot where two small hills of the Waianae range come down parallel on the boundary between Honouliuli and Nanakuli (Ewa and Waianae). The ancient Hawaiians said the hill on the Ewa side was the male and the hill on the Waianae side was female. The stone was found on the Waianae side hill and the place is known as Pili o Kahe (Pili = to cling to, Kahe = to flow). The name refers, therefore, to the female or Waianae side hill. And that is where the boundary between the two districts runs. [Told to E.S. by Simeon Nawaa, March 22, 1954; cited in Sterling and Summers 1978:1]

Honouliuli has a number of topographic features, peaks, streams, gulches, coastal points, and a number of ancient villages, as shown on Figure 11. A list of the names shown on Figure 11 and their meaning is presented in Table 2. All place names meanings are from Pukui et al. (1974) *Place Names of Hawai'i*, unless otherwise noted.

3.1.1.3 Trails through Honouliuli

There were several pre-contact/early historic trails across 'Ewa: a cross-*ahupua'a* trail that traversed 'Ewa and connected Honolulu to Wai'anae; a *mauka-makai* trail that branched off from the cross-*ahupua'a* trail and followed the boundary between Honouliuli and Hō'ae'ae to the Pōhākea Pass and Kolekole Pass to Wai'anae; and a second branching *mauka-makai* trail that generally followed the path of Waikele Stream in Waikele Ahupua'a to Wahiawā in central O'ahu (Figure 12). Of the first *mauka-makai* trail, 'Ī'ī (1959:97) noted “from Kunia the trail went to the plain of Keahumoa, on to Maunauna, and along Paupauwela, which met with the trails from Wahiawā and Waialua.” 'Ī'ī places the area called Kunia east of Pōhākea Pass in the *ahupua'a* of Honouliuli and Hō'ae'ae, *makai* of the modern town of Kunia, and places the plain of Keahumoa between Kunia and Paupauwela, in the most *mauka* portion of Honouliuli. The trail passed near the peak called Maunauna in upper Honouliuli.

The HHCTCP Construction Phase I project area generally follows or parallels the cross-*ahupua'a* trail across the Honouliuli plain. To the east of Honouliuli, this trail was just *mauka* of the floodplains near Pearl Harbor, skirting the inland edges of the productive taro fields. In western Honouliuli, the trail dipped down toward the coast in the direction of a prominent hill and landmark, Pu'uokapolei. The trail then crossed into Wai'anae at the coast near Pili o Kahe, the stone that marked the boundary between the 'Ewa and Wai'anae districts (Figure 12).

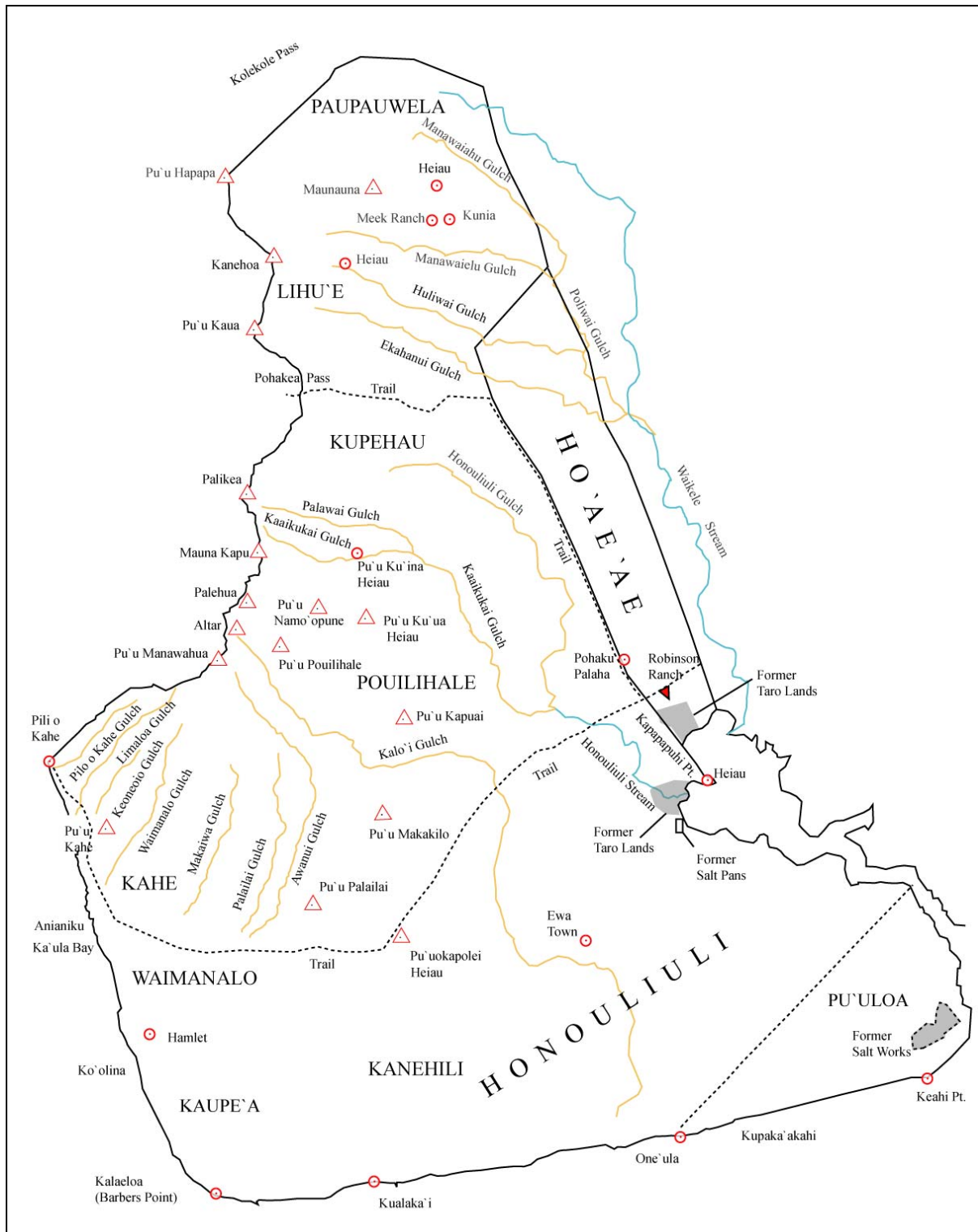


Figure 11. Place Names of Honouliuli (base map 1998 U.S.G.S. map). Note the modern Farrington Highway generally follows the ancient cross-ahupua'a trail

Table 2. Honouliuli Place Names

| Place Name | Meaning |
|---------------------------------------|---|
| Akupu Spring | -- |
| Anianikū Cove | -- |
| Awanui Gulch | --- |
| ‘Ēkahanui Gulch | Large bird's nest fern |
| Hāpapa, Pu‘u | Rock stratum hill; a shallow soil (Thrum 1922:643) |
| Honouliuli Stream/Gulch | Dark bay; blue harbor (Thrum 1922:643) |
| Huliwai Gulch | -- |
| Ka‘aikukui Gulch | The candlenut root |
| Ka‘aumakua (peak) | The family god |
| Kahe Point | Flow |
| Kahe, Pu‘u | Flow |
| Kaihuopala‘ai (West Loch) | The nose of Pala‘ai |
| Kalaeloa Point | The long point |
| Kalo‘i Gulch | The taro patch |
| Kānehili Plain | -- |
| Kānehoa, Pu‘u | Named for native shrubs; Kāne's friend (Thrum 1922:643) |
| Kapapapuhi (Kapapuhi) Point | The numerous eels (Thrum 1922:645) |
| Kapolei, Pu‘u o (hill, <i>heiau</i>) | Beloved Kapo, a sister of Pele |
| Kapuai (peak) | Footstep (Thrum 1922:645) |
| Kaua, Pu‘u | War hill or fort hill |
| Kaula Bay | -- |
| Kaupe‘a Plain | -- |
| Keon‘ō‘io Gulch | The sandy place with bone (‘ō‘io) fish |
| Kolekole Pass | Raw, scarred |
| Ko‘olina (village) | -- |
| Kualaka‘i (village) | <i>Tethys</i> (a sea creature) |
| Ku‘ina, Pu‘u (peak; <i>heiau</i>) | -- |
| Kupaka‘akahi (beach) | -- |
| Ku‘ua, Pu‘u (peak; <i>heiau</i>) | Relinquished hill |
| Laulaunui Island | Large leaf package |

| Place Name | Meaning |
|-------------------|---------------------------------|
| Limaloa Gulch | Long arm |
| Makaīwa Gulch | Mother of pearl eyes |
| Makakilo, Pu'u | Observing eyes |
| Manawahua, Pu'u | Great grief hill or nausea hill |
| Manawaiahu Gulch | -- |
| Manawaielu Gulch | -- |
| Maunakapu (peak) | Sacred mountain |
| Maunauna (peak) | Mountain sent on errands |
| Mo'opune, Pu'u | Grandchild hill |
| One'ula (village) | Red sand |
| Pālailai Gulch | Young <i>lai</i> fish |
| Pālailai, Pu'u | Young <i>lai</i> fish hill |
| Pālehua (peak) | <i>Lehua</i> flower enclosure |
| Palikea (peak) | White cliff |
| Pili o Kahe Point | Clinging to Kahe |
| Pōhākea Pass | White stone |
| Pōhaku Palaha | Broad rock (Thrum 1922:666) |
| Poliwai Gulch | Water bosom |
| Pouilihale, Pu'u | Dark house hill |
| Wai'eli Gulch | Dug water |
| Waimānalo Gulch | Potable water |

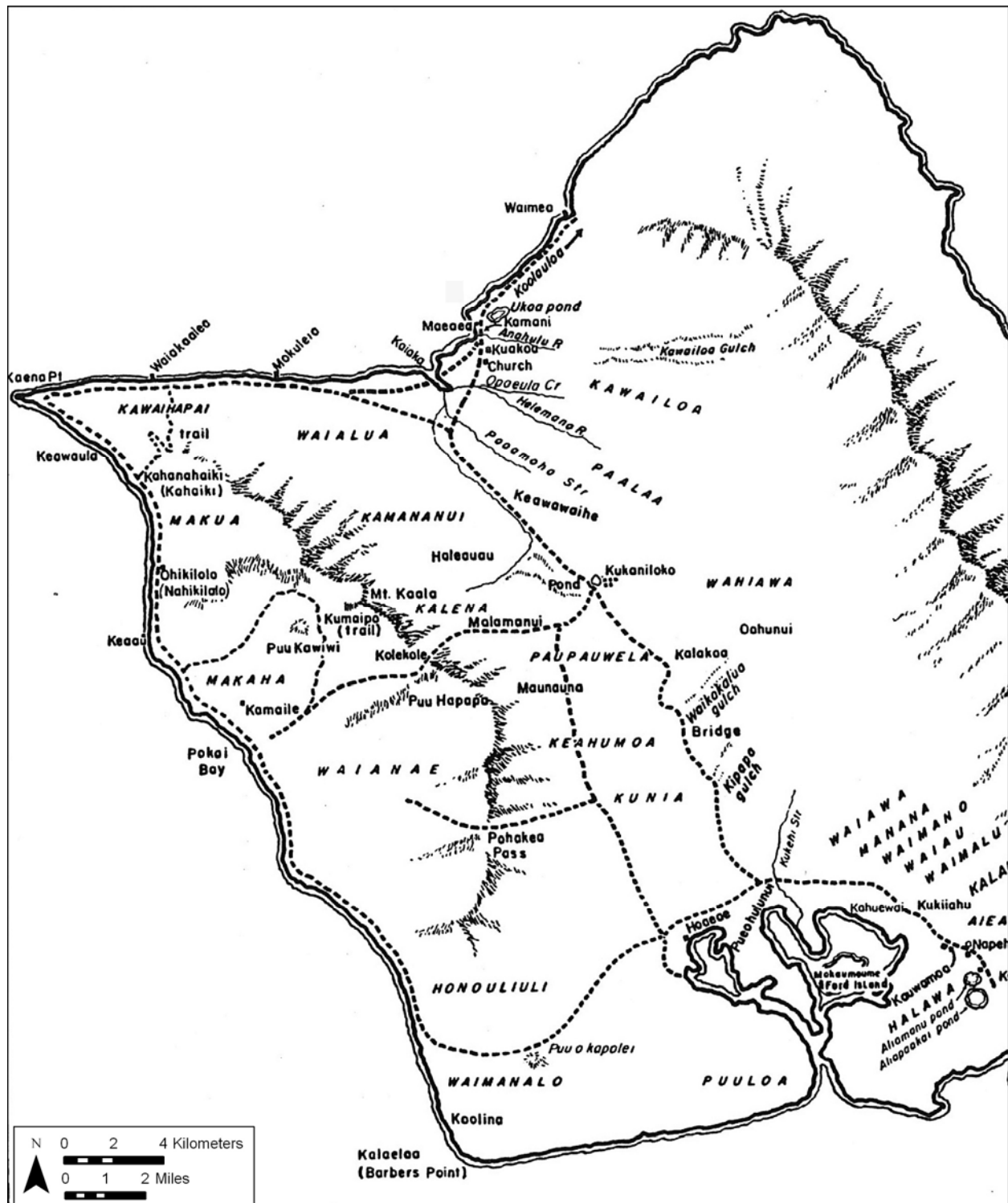


Figure 12. Trails of Leeward O‘ahu, map by Paul Rockwood (‘Ī‘Ī 1959:96)

3.1.1.4 Pu'uokapolei and the Plains of Kaupe'a

Pu'uokapolei was the primary landmark for travelers on the cross-*ahupua'a* trail that ran from Pearl Harbor in the east to Wai'anae in the west (Ī'ī 1959:27, 29; Nakuina 1992:54; E.M. Nakuina 1904, in Sterling and Summers 1978:34). The plain southwest of the hill was called Kaupe'a.

Pu'uokapolei, Astronomical Marker and Heiau

Pu'u means hill and Kapolei means “beloved Kapo,” a reference to the sister of the Hawaiian volcano goddess, Pele. Samuel Kamakau (1976:14) says that ancient Hawaiians used Pu'uokapolei as an astronomical marker to designate the seasons.

...the O'ahu people who reckoned the time (*Oahu pō'e helu*) called the season Kau for the setting of the sun from Pu'uokapolei, a hill in Honouliuli, 'Ewa, to the opening of Mahinaona (*i ke kawaha o Mahinaona*). When the sun moved south from Pu'uokapolei—and during the season of the sun in the south—for the coming of coolness and for the sprouting of new buds on growing things—the season was called Ho'oilō [winter, rainy season].

A *heiau* was once on Pu'uokapolei, but had been destroyed by the time of McAllister's (1933:108) survey of the island in the early 1930s. The hill was used as a point of solar reference or as a place for making astronomical observations (Fornander 1919, *A Lamentation for Kahahana*, Vol. VI, Part II:292). Pu'uokapolei may have been regarded as the gate of the setting sun, just as the eastern gate of Kumukahi in Puna is regarded as the rising sun; both places are associated with the Hawaiian goddess Kapo (Emerson 1993:41). This somewhat contradicts some Hawaiian cosmologies, in which Kū was the god of the rising sun, and Hina, the mother of Kamapua'a, was associated with the setting sun. Fornander (1919, *A Lamentation for Kahahana*, Vol. VI, Part II:292) states that Pu'uokapolei may have been a jumping off place (also connected with the setting sun) and associated with the wandering souls who roamed the plains of Kaupe'a and Kānehili, *makai* of the hill.

Pu'uokapolei and Kamapua'a

Pu'uokapolei was the home of Kamapua'a's grandmother, Kamaunuaniiho, one of the three migrants from Kahiki that were ancestors to the people of O'ahu (Fornander 1919, *Legend of Kamapuaa*, Vol. V, Part II:318; Kahiolo 1978:81, 107). Kamapua'a, the Hawaiian pig god, once lived in Kaluanui on the windward side of O'ahu, but he escaped to 'Ewa when he was pursued by the chief Olopana.

Kamapua'a subsequently conquered most of the island of O'ahu, and, installing his grandmother [Kamaunuaniiho] as queen, took her to Pu'uokapolei, the lesser of the two hillocks forming the southeastern spur of the Wai'anae Mountain Range, and made her establish her court there. This was to compel the people who were to pay tribute to bring all the necessities of life from a distance, to show his absolute power over all. [Nakuina 1904:50-51]

Emma Nakuina goes on to note: “A very short time ago [prior to 1904] the foundations of Kamaunuaniiho’s house could still be seen at Pu‘uokapolei.” Another account (*Ka Loea Kālai‘āina* January 13, 1900, from Sterling and Summers 1978:34) speaks of Kekeleai, the older brother of Kamapua‘a, who also lived on Pu‘uokapolei.

Pu‘uokapolei and the Plains of Kaupe‘a and Kānehili

Hi‘iaka sang this bitter chant addressed to Lohiau and Wahine-‘ōma‘o, which uses the association of the Plains of Kaupe‘a as a place for the wandering of lost souls:

| | |
|---|---|
| <i>Ku‘u aikana i ke awa lau o Pu‘uloa,</i> | We meet at Ewa’s leaf-shaped lagoon, |
| <i>Mai ke kula o Pe‘e-kaua, ke noho oe,</i> | friends; |
| <i>E noho kaua e kui, e lei i ka pua o ke</i> | Let us sit, if you will on this lea |
| <i>kauno ‘a,</i> | And bedeck us with wreaths of Kauno‘a, |
| <i>I ka pua o ke akuli-kuli, o ka wili-</i> | Of akuli-kuli and wili-wili, |
| <i>wili;</i> | My soul went astray in this solitude; |
| <i>O ka iho‘na o Kau-pe‘e i Kane-hili,</i> | It lost the track for once, in spite of luck, |
| <i>Ua hili au; akahi no ka hili o ka la</i> | As I came down the road to Kau-pe‘a. |
| <i>pomaika ‘i;</i> | No nightmare dream was that which |
| <i>E Lohiau ipo, e Wahine-oma‘o,</i> | tricked my soul. |
| <i>Hoe ‘a mai ka wa‘a i a‘e aku au.</i> | This way, dear friends; turn the canoe this |
| | way; |
| | Paddle hither and let me embark |
| | [Emerson 1993:162-163]. |

Several other Honouliuli places are mentioned in this chant, including Pe‘e-kaua, which may be a variation of Kau-pe‘e or Kaupe‘a, and the plains of Kānehili, the last of which again refers to wandering, as the word *hili* means “to go astray” (Emerson 1993:162). In the chant, Hi‘iaka is moving downhill from Kaupe‘a, probably the plains adjacent to Pu‘uokapolei, toward the coast to the plain of Kānehili.

The Plains of Kaupe‘a, Pu‘uokapolei, and the Realm of Homeless Souls

There are several places on the ‘Ewa coastal plain that are associated with *ao kuewa*, the realm of the homeless souls. Samuel Kamakau (1991b:47-49) explains the Hawaiian beliefs in the afterlife:

...There were three realms (*ao*) for the spirits of the dead...There were, first, the realm of the homeless souls, the *ao kuewa*; second, the realm of the ancestral spirits, the *ao ‘aumakua*; and third, the realm of Milu, *ke ao o Milu*...

The *ao kuewa*, the realm of homeless souls, was also called the *ao ‘auwana*, the realm of wandering souls. When a man who had no rightful place in the ‘*aumakua* realm (*kanaka kuleana ‘ole*) died, his soul would wander about and stray amongst the underbrush on the plain of Kama‘oma‘o on Maui, or in the *wiliwili* grove of

Kaupe‘a on Oahu. If his soul came to Leilono [in Hālawā, ‘Ewa near Red Hill], there he would find the breadfruit tree of Leiwalō, *ka ‘ulu o Leiwalō*. If it was not found by an ‘aumakua soul who knew it (*i ma‘a mau iaia*), or one who would help it, the soul would leap upon the decayed branch of the breadfruit tree and fall down into endless night, *the pō pau ‘ole o Milu*. Or, a soul that had no rightful place in the ‘aumakua realm, or who had no relative or friend (*makamaka*) there who would watch out for it and welcome it, would slip over the flat lands like a wind, until it came to a leaping place of souls, a *leina a ka ‘uhane*... [Kamakau 1991a:47]

On the plain of Kaupe‘a beside Pu‘uloa [Pearl Harbor], wandering souls could go to catch moths (*pulelehua*) and spiders (*nanana*). However, wandering souls could not go far in the places mentioned earlier before they would be found catching spiders by ‘aumakua souls, and be helped to escape... [Kamakau 1991a:49]

The breadfruit tree Leilono was said to have been located on the ‘Ewa-Honolulu border, above Āliamanu. In another section of his account of the dead, Kamakau (1991a:29) calls the plain of wandering souls the “plain at Pu‘uokapolei.”

There are many who have died and have returned to say that they had no claim to an ‘aumakua [realm] (*kuleana‘ole*). These are the souls, it is said, who only wander upon the plain of Kama‘oma‘o on Maui or on the plain at Pu‘uokapolei on Oahu. Spiders and moths are their food. [Kamakau 1991b:29]

This association of Pu‘uokapolei and Kānehili with wandering souls is also illustrated in a lament on the death of Kahahana, the paramount chief of O‘ahu, who was killed by his foster father, the Maui chief Kahekili, after Kahahana became treacherous and killed the high priest Ka‘opulupulu.

| | |
|---|--------------------------------------|
| Go carefully lest you fall dead in the sun, | <i>E newa ai o hea make i ka la,</i> |
| The god that dwells on Kapolei hill. | <i>Akua noho la i Puuokapolei.</i> |
| The sun is wailing on account of the | <i>E hanehane mai ana ka la i na</i> |
| women of Kamao, | <i>wahine o Kamao,</i> |
| A hiding god, blossoming | <i>Akua pee,</i> |
| ohai of the banks, | <i>pua ohai o ke kaha,</i> |
| Contented among the stones- | <i>I walea wale i ke a-</i> |
| Among the breadfruit | <i>I ka ulu</i> |
| planted by Kahai. | <i>kanu a Kahai.</i> |
| Thou wast spoken of by the oo- | <i>Haina oe e ka oo-</i> |
| By the bird of Kanehili. | <i>E ka manu o Kanehili.</i> |

[Fornander 1919, *A Lamentation for Kahahana*, Vol. VI, Part II:297]

Fornander provides some notes on this lament. The god dwelling at Kapolei is Kahahana, stating that this is where his soul has gone. Kamao is one of the names of the door to the underworld. This lament draws an association with wandering souls and the place where the first breadfruit tree was planted by Kaha‘i at Pu‘uloa (Fornander 1919, *A Lamentation for Kahahana*, Vol. VI, Part II:304).

Pukui (1983:180) offers this Hawaiian saying, which places the wandering souls in a *wiliwili* grove at Kaupe'a.

Ka wiliwili o Kaupe'a. The *wiliwili* grove of Kaupe'a.

In 'Ewa, O'ahu. Said to be where homeless ghosts wander among the trees.

Beckwith (1940:154) has stressed that "the worst fate that could befall a soul was to be abandoned by its *'aumakua* and left to stray, a wandering spirit (*kuewa*) in some barren and desolate place." These wandering spirits were often malicious, so the places where they wandered were avoided.

The Plain of Pukaua

The Hawaiian language newspaper *Ka Loea Kālai'āina*, (January 13, 1900) relates that near Pu'uokapolei, on the plain of Pukaua, on the *mauka* side of the road, there was a large rock. This legend suggests that the plain around Pu'uokapolei was called Pukaua. The legend is as follows:

If a traveler should go by the government road to Waianae, after leaving the village of gold, Honouliuli, he will first come to the plain of Puu-ainako and when that is passed, Ke-one-ae. Then there is a straight climb up to Puu-o-Kapolei and there look seaward from the government road to a small hill, that is Puu-Kapolei. ... You go down some small inclines, then to a plain. This plain is Pukaua and on the mauka side of the road, you will see a large rock standing on the plain... There were two supernatural old women or rather peculiar women with strange powers and Puukaua belonged to them. While they were down fishing at Kualaka'i [near Barbers Point] in the evening, they caught these things, *'a'ama* crabs, *pipipi* shellfish, and whatever they could get with their hands. As they were returning to the plain from the shore and thinking of getting home while it was yet dark, they failed for they met a one-eyed person [bad omen]. It became light as they came near to the plain, so that passing people were distinguishable. They were still below the road and became frightened lest they be seen by men. They began to run - running, leaping, falling, sprawling, rising up and running on, without a thought of the *'a'ama* crabs and seaweeds that dropped on the way, so long as they would reach the upper side of the road. They did not go far for by then it was broad daylight. One woman said to the other, "Let us hide lest people see us," and so they hid. Their bodies turned into stone and that is one of the famous things on this plain to this day, the stone body. This is the end of these strange women. When one visits the plain, it will do no harm to glance on the upper side of the road and see them standing on the plain. [*Ka Loea Kālai'āina*, January 13, 1900, translation in Sterling and Summers 1978:39]

In another version of this story, the two women met Hi'iaka as she journeyed toward the 'Ewa coast. The women were *mo'o* (supernatural beings) and were afraid that Hi'iaka would kill them, so they changed into their lizard form. One of the lizards hid in a little space on a stone beside the coastal trail, and the other hid nearby (*Ka Hōkū o Hawai'i*, February 15, 1927, translated in Maly 1997:19). From that time on the stone was known as *pe'e-kāua*, meaning "we two hidden." Hi'iaka greeted the two women but did not harm them, and passed on.

When she reached Pu‘uokapolei, she also greeted two old women who lived at an ‘*ohai* grove on the hill. These women were named Pu‘uokapolei and Nāwaineokama‘oma‘o (*Ka Hōkū o Hawai‘i*, February 22, 1927, translated in Maly 1997:19). As she continued her travels, she looked to the ocean and saw the canoe carrying Lohi‘au.

| | |
|---|---|
| My man on the many harbored | <i>Ku‘u kāne i ke awa lau o Pu‘uloa</i> |
| sea of Pu‘uloa | |
| As seen from the plain of Pe‘ekāua | <i>Mai ke kula o Pe‘ekāua ke noho</i> |
| Let us dwell upon the ‘ <i>ōhai</i> covered shore | <i>E noho kāua i ke kaha o ka ‘ōhai</i> |
| Where the noni blossoms are twisted | <i>I ka wiliwili i ka pua o ka lau noni</i> |
| together | |
| Descending along Kānehili | <i>O ka ihona i Kānehili la</i> |
| I am winding along | <i>Ua hili ho‘i au-e</i> |
| [<i>Ka Hōkū o Hawai‘i</i> , February 22, 1927, translated in Maly 1997:20] | |

3.1.1.5 The Caves of Honouliuli

‘Ewa was famous for the many limestone caves formed in the uplifted coral, called the “Ewa Karst.” This Pleistocene limestone outcrop, where not covered by alluvium or stockpiled material, has characteristic dissolution “pit caves” (Mylroie and Carew 1995), which are nearly universally, but erroneously, referred to as “sink holes” (Halliday 2005). These pit caves, or sinkholes, vary widely in areal extent and depth, with some of the more modest features comparable in volume to five-gallon buckets, while some of the larger features, although usually irregularly shaped, are several meters wide and several meters deep. In traditional Hawaiian times, the areas of exposed coral outcrop were undoubtedly more extensive.

Some of these caves, called *ka-lua-ōlohe* were inhabited by the *ōlohe*, a type of people that looked like other humans but had tails like dogs (Beckwith 1940:343). These people were skilled in wrestling and bone-breaking and often hid along narrow passes to rob travelers; they were also reputed to be cannibals. One famous cannibal king, Kaupe, lived in Līhu‘e in upland Honouliuli, was an *ōlohe*.

The caves of Pu‘uloa were sometimes also used as burial caves. In 1849, Keali‘iahonui, son of Kaua‘i’s last king, Kaumuali‘i, died. He had once been married to the chiefess Kekau‘ōnohi, who had stayed with him until 1849. She wanted to bury her ex-husband at sea.

It seems that by Kekauonohi’s orders, the coffin containing her late husband’s remains was removed to Puuloa, Ewa, with the view of having it afterwards taken out to sea and there sunk. It was temporarily deposited in a cavern in the coral limestone back of Puuloa, which has long been used for a burial place, and has lately been closed up. [Alexander 1907:27]

After some initial objections by the niece of Keali‘iahonui, the body was removed from the outer coffin, the rest was sunk, and the coffin was later buried somewhere in Pu‘uloa.

3.1.1.6 Pearl Harbor (Pu‘uloa) and West Loch (Kaihuopala‘ai)

The “Silent Fish” of Pearl Harbor

Pearl Harbor was called Pu‘uloa or *Keawalau-o-Pu‘uloa*, “the many harbored-sea of Pu‘uloa” (Pukui 1983:182) by the Hawaiians. An alternate name was Awawalei, or “garland (*lei*) of harbors” (Handy and Handy 1972:469). Pukui (1983:120) uses the name Awalau for Pearl Harbor, as in the saying “*Huhui na ‘ōpua i Awalau*, The clouds met at Pearl Harbor. Said of the mating of two people.” Emerson (1993:167) interpreted Awalau as “leaf-shaped lagoon.”

Clark (1977:70) says that its English name came from the name Waimomi, or “water of the pearl,” an alternate name for the Pearl River (Pearl Harbor). The harbor was named Pearl Harbor after the pearl oysters of the family Pteriidae (mainly *Pinctada radiata*), which were once abundant on the harbor reefs, but were later decimated by over-harvesting. This oyster was supposedly brought from Kahiki, the Hawaiian ancestral lands, by a *mo’o* (lizard or water spirit) named Kānekua‘ana (Handy and Handy 1972:470).

Kānekua‘ana was the *kia* ‘i (food guardian) for ‘Ewa. When food was scarce, the descendants of Kua‘ana built *wai hau heiau* (a *heiau* for *mo‘o*) for her and lit fires to plead for her blessings. For ‘Ewa the chief *i‘a* (marine food) blessing was the famous *pipi*, or pearl oyster. Samuel Kamakau describes the *pipi* of Honouliuli.

That was the oyster that came in from deep water to the mussel beds near shore, from the channel entrance of Pu'uloa to the rocks along the edges of the fishponds. They grew right on the *nahawe*le mussels and thus was this *i'a* obtained. Not six months after the *hau* branches [that placed a *kapu* on these waters until the *pipi* should come up] were set up, the *pipi* were found in abundance-enough for all 'Ewa-and fat with flesh. Within the oyster was a jewel (daimana) called a pearl (*mom*i), beautiful as the eyeball of a fish, white and shining; white as the cuttle fish, and shining with the colors of the rainbow-reds and yellow and blues, and some pinkish white, ranging in size from small to large. They were of great bargaining value (*he waiwai kumuku'ai nui*) in the ancient days, but were just "rubbish" ('*opala*) in 'Ewa. [Kamakau 1991b:83]

This oyster, the *pipi*, was sometimes called “the silent fish,” or, *i ‘a hamau leo o ‘Ewa*, ‘Ewa’s silent sea creature (Handy and Handy 1972:471). The *pipi* collectors were supposed to stay quiet while harvesting the shells, as in the sayings:

Ka i'a hāmau leo o 'Ewa.

The fish of 'Ewa that silences the voice.

The pearl oyster, which has to be gathered in silence. [Pukui 1983:144]

Haunāele ‘Ewa i ka Moa‘e.

‘Ewa is disturbed by the Moa‘e wind.

Used about something disturbing, like a violet argument. When the people of 'Ewa went to gather the *pipi* (pearl oyster), they did so in silence, for if they spoke, a Moa'e breeze would suddenly blow across the water, rippling it, and the oysters would disappear. [Pukui 1983:59]

E hāmau o makani mai auane‘i.

Hush, lest the wind rise.

Hold your silence or trouble will come to us. When the people went to gather pearl oysters at Pu'uloa, they did so in silence, for they believed that if they

spoke, a gust of wind would ripple the water and the oysters would vanish [Pukui 1983:34].

Ka i'a kuhi lima o 'Ewa.

The gesturing fish of 'Ewa.

The *pipi*, or pearl oyster. Fishermen did not speak when fishing for them but gestured to each other like deaf-mutes. [Pukui 1983:148]

Sereno Bishop, an early resident of O'ahu, wrote of his time in the area around 1836, and of the pearl oyster, the *pipi*, and another edible clam, identified by Margaret Titcomb (1979:351) as probably *Lioconcha heiroglyphica*:

The lochs or lagoons of Pearl River were not then as shoal as now. The subsequent occupation of the uplands by cattle denuded the country of herbage, and caused vast quantities of earth to be washed down by storms into the lagoons, shoaling the water for a long distance seaward. No doubt the area of deepwater and anchorage has been greatly diminished. In the thirties, the small oyster was quite abundant, and common on our table. Small pearls were frequently found in them. No doubt the copious inflow of fresh water favored their presence. I think they have become almost entire extinct, drowned out by the mud. There was also at Pearl River a handsome speckled clam, of a delicate flavor which contained milk white pearls of exquisite luster and perfectly spherical. I think the clam is still found in the Ewa Lochs. [Bishop 1901:87]

Older Hawaiians believed that the *pipi* disappeared around the time of the smallpox epidemic of 1850-1853, because Kānekua'ana became displeased at the greed of some *konohiki* (overseers).

The people of the place believe that the lizard was angry because the *konohikis* imposed *kapus* [bans], were cross with the women and seized their catch of oysters. So this "fish" was removed to Tahiti and other lands. When it vanished a white, toothed thing grew everywhere in the sea, of 'Ewa, which the natives of 'Ewa had named the *pahikaua* (sword). It is sharp edged and had come from Kauai-helanai, according to this legend. [Manu 1885, cited in Sterling and Summer 1978:50]

Pahikaua is the Hawaiian name for the mussel, *Brachidontes crebristriatus* (Mytilidae), which was also a popular clam eaten by the residents of Pearl Harbor.

A clarification of the story of Kānekua'ana and the pearl oysters of Pearl Harbor is given, in which it seems an overseer had set a ban on the *pipi* for several months of the year so that their numbers could increase. A poor widow, a relation of the *mo'o*, took some of the *pipi* and hid them in a basket. The *konohiki* found the hidden shells, and took them from her, emptying them back into the sea, which was proper. However, after this he followed the woman home and also demanded that she pay a stiff fine in cash, which she did not have. The *mo'o* thought this was unjust and the next night she took possession of a neighbor who was a medium.

...After the overseer had gone back to Palea the lizard goddess possessed her aged keeper [a woman of Ewa] and said to those in the house, "I am taking the *pipi* back to Kahiki and they will not return until all the descendants of this man

are dead. I go to sleep. Do not awaken my medium until she wakes of her own accord.” The command was obeyed and she slept four days and four nights before she awoke. During the time that she slept the pearl oysters vanished from the places where they were found in great numbers, as far as the shore. The few found today are merely nothing...[*Ka Loea Kālai‘āina*, June 3, 1899, translation in Sterling and Summers 1978:]

Ka‘ahupāhau, the Queen Shark of O‘ahu

Pearl Harbor, in legendary traditions, is closely associated with shark ‘*aumakua*, guardian spirits for specific Hawaiian families or clans. Pukui (1943:56) and others (Sheldon 1883) claim that the sharks of Pearl Harbor were so tame that people used to ride on their backs, and that their human relatives would feed them with ‘*awa*. The most famous guardian shark was Ka‘ahupāhau, the queen shark of O‘ahu, who lived in Pu‘uloa (Pearl Harbor). Her name means “cloak well cared for” (Pukui 1943:56), or “well cared-for feather cloak”; the feather cloak was a symbol of royalty.

Ka‘ahupāhau and her brother, Kahi‘uka, had been born as humans and were turned into sharks (Mary Kawena Pukui, March 29, 1954, from Sterling and Summers 1978:56).

The mother, who was a chiefess, of Ka‘ahupāhau was gathering limu [seaweed] in the waters of Pearl Harbor when she had a miscarriage. Thinking the baby dead she left it in the water to be washed away. Later she went again to gather limu and was bitten by a shark. She went to a kahuna [priest] who told her that the shark was Ka‘ahupāhau who was her own daughter, the baby she thought was dead. The kahuna advised her to go to the place and build an ahu (heap) of hau a sort of landing from which she could feed the shark and care for it. It was from that time by command of the mother that all people of Ewa were to be always be protected from sharks whether in Pearl Harbor or outside. [E.S. as told by Simeon Nawaa, Mar. 22, 1954, from Sterling and Summers 1978:56]

This explains the meaning of the shark’s name Ka‘ahupāhau, “the mound (*ahu*) of *hau*” (*Hibiscus tiliaceus*). The grandmother of Ka‘ahupāhau and her brother, Koihala, lived in Honouliuli; one day she was making *lei* for her shark grandchildren. A young girl named Pāpio rudely begged for one of the *lei*, but Koihala refused. On her way to her favorite surfing spot at Keahi Point, Pāpio snatched up one of the *lei*, and laughingly went surfing. Koihala angrily told Ka‘ahupāhau about the stolen *lei*, and the shark killed the girl, grabbing her from a rock in the sea where she was resting.

Ka‘ahupāhau soon recovered from her anger and became very sorry. She declared that from hence forth all sharks in her domain should not destroy, but protect the people round about. As flowers were the cause of the trouble she forbade their being carried or worn on the water of Pu‘uloa. From that time all the people of that locality and the sharks in the lochs were the best of friends...[Pukui 1943:56].

In a second version of this story, the shark gods Kānehunamoku and Kamohoali‘i were the ones that had placed a *kanawai* (decree) against the attack of men by all sharks around O‘ahu. As

a result of the attack of the chiefess Pāpio, Ka'ahupāhau was put on trial and tried at Uluka'a [the realm of the gods]. She escaped the punishment of death, but was placed in confinement.

After her confinement ended several years later Ka'ahupāhau was very weak. She went on a sightseeing trip, got into trouble, and was almost killed. But she received great help from Kupiapia and Laukahi'u, sons of Kuhaimoana, when their enemies were all slain the *kanawai* was firmly established. This law-that no shark must bite or attempt to eat a person in Oahu waters-is well known from Pu'uloa to the Ewa. Anyone who doubts my work must be a *malihini* [recent resident] there. Only in recent times have sharks been known to bite people in Oahu waters or to have devoured them; it was not so in old times. [Kamakau 1991b:73]

This information on the protective nature of Ka'ahupāhau is somewhat contradicted by the writings of the Russian explorer Otto Von Kotzebue, who walked to Pearl Harbor in 1821, but was unable to actually sail on the waters. He was told that people were thrown into the water as sacrifices to the sharks. However, it is uncertain if the person who told him this was an actual resident of 'Ewa, who would know the real truth. Kotzebue's account is:

In the Pearl River there are sharks of remarkable size, and there have made on the banks an artificial pond of coral stones, in which a large shark is kept, to which, I was told, they often threw grown-up people, but more frequently children, as victims. [Kotzebue 1821:338-348]

The protection of Ka'ahupāhau is emphasized in many other Hawaiian traditions. One time, a man-eating shark called Mikololou from the Ka'ū district of the island of Hawai'i, came visiting at Pearl Harbor with other sharks, some man-eating, some not. Mikololou remarked "What fine, fat crabs you have here," from which Ka'ahupāhau knew that some of the sharks were man-eaters, since sharks referred to fishermen as "fat crabs." She directed the fishermen to place a barrier of nets across the entrance to the harbor, and when the sharks left her home, they could not get back out to the ocean.

The sharks of the lochs attacked the man-eaters from outside and beat them unmercifully. A shark from Ka'u, Hawaii, who was not a man-eater, threw his weight over the nets and pressed them down. His sons changed themselves into pao'o [blennies] fishes and leaped where the net was forced down, thus escaping from the place where the battle of shark was raging. Mikololou was caught fast in the nets and dragged ashore where his head was cut off and his body burned. [Pukui 1943:56]

In another version of this story, Mikololou is accompanied to Pearl Harbor with his shark friends Kua, Keali'ikauaoka'ū, Pākaiea, and Kalani; Mikololou was the only man-eater. To escape the nets:

Keali'ikauaoka'ū changed himself into a pao'o fish, which lives among the rocks, and leapt out of the net. Kua changed into a lupe, as the spotted stingray is called, and weighted down the net on one side, helping his son Kalani and nephew Pākaiea, who were half human, to escape. [Pukui and Green 1995:40]

Only Mikololou was caught in the nets, and his body was tossed on shore to rot, until only the tongue was left. In some versions of this story, the tongue immediately jumps into the water and then becomes a shark again (Pukui and Green 1995:41). In other versions (Pukui 1943:56), the tongue is eaten by a dog, which then jumps into the water, turns into a shark, and escapes. In both versions, Mikololou returns to Ka'ū, never to bother Ka'ahupāhau again.

In one version (Webb 1923:307-308) version, Mikololou went back to his home island of Hawai'i and organized an army of sharks to return to Pearl Harbor, but he was again defeated by the fishermen of 'Ewa under the command of Ka'ahupāhau, who slaughtered so many of the sharks that from then on "the sea of Pu'uloa is safe and peaceful through her law that sharks shall not attack man. That is why these waters are safe for people to swim from shore to shore without fear" (Webb 1923:308). The watchful eye of Ka'ahupāhau led to these Hawaiian sayings:

| | |
|------------------------------------|------------------------------------|
| <i>Alahula Pu'uloa, he alahele</i> | Everywhere in Pu'uloa is the trail |
| <i>na Ka'ahupāhau</i> | of Ka'ahupāhau |

Said of a person who goes everywhere, looking, peering, seeing all, or of a person familiar with every nook and corner of a place. Ka'ahupāhau is the shark goddess of Pu'uloa (Pearl Harbor) who guarded the people from being molested by sharks. She moved about, constantly watching. [Pukui 1983:14]

| | |
|------------------------------|------------------------------|
| <i>Ho'ahewa na niuhi ia.</i> | The man-eating sharks blamed |
| <i>Ka'ahupāhau</i> | Ka'ahupāhau. |

Evil-doers blame the person who safeguards the rights of others. Ka'ahupāhau was the guardian shark goddess of Pu'uloa (Pearl Harbor) who drove out or destroyed all the man-eating sharks. [Pukui 1983:108]

| | |
|------------------------------------|----------------------------|
| <i>Mehameha wale no o Pu'uloa,</i> | Pu'uloa became lonely when |
| <i>i ka hele a Ka'ahupāhau.</i> | Ka'ahupāhau went away. |

The home is lonely when a loved one has gone. Ka'ahupāhau, guardian shark of Pu'uloa (Pearl Harbor), was dearly loved by the people. [Pukui 1983:234]

| | |
|-------------------------------|---------------------------------------|
| <i>Make o Mikololou a ola</i> | Mikololou died and came to life again |
| <i>i ke ale lo</i> | through his tongue. |

Said of one who talks himself out of a predicament. [Pukui 1983:229]

There were other guardian sharks in Pearl Harbor, including a brother of Ka'ahupāhau's named Kahi'ukā (the smiting tail), and a son named Kūpīpī (Pukui 1943:57), or, in some versions, twin sons, named Kūpīpī and Kūmaninini (Pukui and Green 1995:41). In one version of the Story of Pāpio, recounted above, it is said the Ka'ahupāhau later turned into a stone, although the people of Pu'uloa continued to feed her (Sterling and Summers 1978:56).

Kahi'ukā was the brother of Ka'ahupāhau. The name means "smiting tail." This shark was called by this name because it was his duty to warn the people of Ewa of the presence of strange and unfriendly sharks in these waters and he did so by nudging them or striking at them with his tail. When ever anyone was fishing and felt a nudge they would know it was Kahi'uka, warning them and they would

leave the water immediately [E.S. as told by Simeon Nawaa, Mar. 22, 1954, from Sterling and Summers 1978:56].

There are two different accounts of the home of this shark brother. The above reference says that Kahi'ukā lived at the site of the old dry dock. Mary Pukui disagrees, and says the site of the old dry dock was the home of the son, not the brother of Ka'ahupāhau. Mary Pukui says Kahi'ukā lived in a cavern underwater off Moku'ume'ume (Ford Island) near Keanapua'a Point; he had a stone form in deep water some distance from the cave that could be seen from the surface (Mary Kawena Pukui, Mar. 29, 1954, from Sterling and Summers 1978:56). J.S. Emerson (1892:11) wrote in the late 19th century that Kahi'ukā's keeper, Kimona, would often find fish nets missing and knew that Kahi'ukā had carried them up shore to a place of safety. Pukui also relates that the shark was named "smiting tail" because one side was longer than the other, and the shark would use his tail to smite unfriendly sharks.

Ka'ehu-iki-manō-o-Pu'uloa, the Little Yellow Shark

One of the shark *'aumakua* associated with Pearl Harbor was the little yellow shark called Ka'ehu, who was born on the Big Island, but later traveled to O'ahu and settled at Pu'uloa. His ancestor was Kama'ili'ili, the Hawaiian shark god, brother of the Hawaiian volcano goddess, Pele. Ka'ehu was a guardian of the Hawaiian people and once saved several surf riders at Waikīkī from a man-eating shark called Pehu (Knudsen 1946:9-13; Westervelt 1963:55-58).

In Thrum's translation of this legend, the shark's name is Ka-ehu-iki-manō-o-Pu'uloa, meaning "the small, blonde shark of Pu'uloa." He was born in Puna, Hawai'i, but soon left on a tour of all of the islands, so that he could call and pay respects to all of the king-sharks of Hawai'i.

...Puuloa, Oahu, was the next objective. Reaching its entrance they visited the pit of Komoawa, where Kaahupahau's watcher lived. Here the young shark made himself known, as usual; the object of the journey, and the desire to meet the famous queen-shark protector of Oahu's water...Welcome greetings were sent by the messenger, who was bid entertain the visitors in the outer cave, and on the morrow the party could come up the lochs to meet the queen...The company then repaired to the royal cave at Honouliuli, where the visitors were supplied with soft coconut and *awa*, their home food and beverage. [Thrum 1923:301-302]

The cave of Komoawa may be the Hawaiian words for "channel" or harbor" entrance (Pukui and Elbert 1986:164). In another version of this story, the shark watcher himself is named Komoawa and the cave that he lives in is called Kea'ali'i. Kea'ali'i guards the entrance to Pearl Harbor, while the home of Ka'ahupāhau is deeper into Honouliuli lagoon (Sheldon 1883).

In 1823, the missionary Hiram Bingham accompanied Liholiho (King Kamehameha II) and his company to the royal compound at Pu'uloa, where he was shown a cave that was home to a shark god.

I one day accompanied the king and others by boat to see the reputed habitation of an Hawaiian deity, on the bank of the lagoon of 'Ewa. It was a cavern or fissure in a rock, chiefly under water, where, as the traditions teach, and as some then affirmed, a god, once in human form, taking the form of a shark, had his

subterraqueous abode. Sharks were regarded by the Hawaiians as gods capable of being influenced by prayers and sacrifices, either to kill those who hate and despise them, or to spare those who respect and worship them...[Bingham 1847:177]

Although Bingham stated in this year that no one any longer believed these stories, there were some who kept the beliefs of the guardian sharks alive. In 1912, dredging in Pearl Harbor was completed and a large dry-dock was completed, but collapsed the very next year. The native Hawaiians believed that the dock had collapsed because it had been built over the home of Kūpīpī the shark son of Ka'ahupāhau's, who lived in a cavern near the harbor entrance at Pu'uloa. "Angered by the violation of his home, the shark prince destroyed the imposing structure" (Clark 1977:69-70). The dock was rebuilt in the same year, but this time only after a blessing on the construction was made by Hawaiian traditional practitioners.

In other versions of this story, the name of the shark is interpreted as "the little ruddy shark" (Emerson n.d.), or the "little reddish-haired shark," named for the reddish ('ehu) hair of Ka'ehu. In this version, the cave of Ka'ehu is called Pānau, and the human mother and father of the little shark are Kapukapu and Holei of Pānau, in Puna, Hawai'i (Emory et al. 1959:63).

Kāne and Kanaloa and the Fish Ponds of West Loch

According to an account in the Hawaiian newspaper *Ka Loea Kālai'āina* (June 10, 1899), several of the fishponds in the Pu'uloa area were made by the brother gods, Kāne and Kanaloa. A fisherman living in Pu'uloa, named Hanakahi, prayed to unknown gods, until one day two men came to his house. They revealed to him that they were the gods to whom he should pray. Kāne and Kanaloa then built fishponds at Ke'anapua'a, but were not satisfied. Then they built the fishpond, Kepo'okala, but were still not satisfied. Finally they made the pond Kapākule, which they stocked with all manner of fish. They gifted all of these fishponds to Hanakahi and his descendants (Handy and Handy 1972:473; *Ka Loea Kālai'āina*, July 8, 1899).

According to Mary Pukui (1943:56-57), who visited Kapākule fishpond when she was young, the pond was built by the legendary little people of Hawai'i, the *menehune*, under the direction of the gods Kāne and Kanaloa. Pukui describes several unique aspects of this pond:

On the left side of the pond stood the stone called Hina, which represented a goddess of the sea by that by that name. Each time the sea ebbed, the rock became gradually visible, vanishing again under water at high tide. Ku, another stone on the right, was never seen above sea level. This stone represented Ku'ula, Red Ku, a god for fish and fishermen. From one side of the pond a long wall composed of driven stakes of hard wood, ran toward the island [Laulaunui] in the lochs. When the fish swam up the channel and then inside of this wall, they invariably found themselves in the pond. A short distance from the spot where the pond touched the shore was a small koa or altar composed of coral rock. It was here that the first fish caught in the pond was laid as an offering to the gods. [Pukui 1943:56]

The fishpond contained many fish, especially the *akule* (scad fish, *Trachurops crumenophthalmus*), thus its name, "the enclosure for *akule* fish" (Pukui 1943:56-57). The pond was destroyed when the channel to Pearl Harbor was dredged in the early 20th century. The

caretaker of the pond took the stones Kū and Hina to a deep place in the ocean and sunk them so “none would harm or defile them.” Cobb (1903:733) says the pond was used to catch the larger *akule* (goggler), *opelu* (mackerel scad), *weke* (goat fish), *kawakawa* (bonito), and sharks. It was unusual for having walls made of coral. This contradicts much of the legendary material that says that sharks were not killed within Pearl Harbor. However, Kamakau does relate that Kekuamanoha and Kauhiwawaono, two conspirators against Kamehameha I, lived at Pu‘uloa. The chief Kauhiwawaono was known to murder people and use their bodies as shark bait (Kamakau 1992:182, 232).

Samuel Kamakau adds more information on the pond Kapākule, and a second one called Kepo‘okala.

At Pu‘uloa on Oahu were two unusual ponds [fish traps]—Kapakule and Kepoolala. Kapakule was the better one. The rocks of its walls, *kuapa*, could be seen protruding at high tide, but the interlocking stone walls (*pae niho pohaku*) of the other pond were still under water at high tide...It [Kapakule] was said to have been built by the ‘*e‘epa* people [mysterious people] at the command of Kane ma...

This is how the fish entered the pond. At high tide many fish would go past the *mauka* side of the pond, and when they returned they would become frightened by the projecting shadows of the trunks, and would go into the opening. The fish that went along the edge of the sand reached the seaward wall, then turned back toward the middle and entered the *anapuna* (the arched portion of the trap) A man ran out and placed a “cut-off” seine net (‘*omuku lau*) in the opening, and the fish shoved and crowded into it. The fish that were caught in the net were dumped out, and those not caught in the net were attacked with sharp sticks and tossed out, or were seized by those who were strong. [Kamakau 1976:88]

The Story of Kaihuopala‘ai

In the Legend of Maikohā (Fornander 1919, *Legend of Maikoha*, Vol. V, Part II:270-271), a sister of Maikohā, a deified hairy man who became the god of *tapa* makers, named Kaihuopala‘ai, journeys to O‘ahu:

‘Ike aku la o Kaihuopala‘ai i ka maikai o Kapapaapūhi, he kāne e noho ana ma Honouliuli ma ‘Ewa. Moe iho la lāua, a noho iho la o Kaihuopala‘ai i laila a hiki i kēia lā. ‘Oia kēlā loko kai e ho‘opuni ia nei i ka ‘anae, nona nā i‘a he nui loa, a hiki i kēia kākau ana.

Kaihuopala‘ai saw a goodly man by the name of Kapapaapūhi who was living at Honouliuli, ‘Ewa; she fell in love with him and they were united, so Kaihuopala‘ai has remained in ‘Ewa to this day. She was changed into that fishpond in which mullet are kept and fattened, and that fish pond is used for that purpose to this day [Fornander 1919, *Legend of Maikoha*, Vol. V, Part II:270].

The name of Maikohā’s sister, Kaihuopala‘ai, which means “the nose of Pala‘ai” (Pukui et al. 1974:68) is also the name the Hawaiians used for the west loch of Pearl Harbor. McAllister (1933) recorded that other Hawaiians say there never was a fishpond by that name. Beckwith

(1918) says that Kaihuopala'ai changed into the fishpond near the place called Kapapapūhi, which means "the eel flats." This is identified on old maps as the peninsula that juts into the west side of West Loch (sometimes spelled Kapapa'apūhi); early Hawaiian settlement was focused on this area.

There is also a famous *pōhaku*, or rock, associated with the traveling mullet of Pearl Harbor.

...I...asked the person sitting on my left, "What place is this?" Answer – "This is Pearl City." It was here that mullets were bred in the ancient times and that flat stone there was called Mullet Rock or Pōhaku Anae. It lies near the beach by Ewa mill. [*Ka Nūpepa Kū'oko'a*, Oct. 2, 1908, from Sterling and Summers 1978:53]

The Traveling Mullet of Honouliuli

The story of Kaihuopala'ai, or Ihuopala'ai, is also associated with the tradition of the *anae-holo*, the traveling mullet of Pearl Harbor (Nakuina 1998:270-272):

The home of the '*anae-holo* is at Honouliuli, Pearl Harbor, at a place called Ihuopala'ai. They make periodical journeys around to the opposite side of the island, starting from Pu'uloa and going to windward, passing successively Kumumanu, Kalihi, Kou, Kālia, Waikīkī, Ka'alāwai, and so on, around to the Ko'olau side, ending at Lā'ie, and then returning by the same course to their starting point. [Nakuina 1998:271]

In Nakuina's account, Ihupala'ai is a male who possesses a Kū'ula or fish god that supplied the large mullet known as *anae*. His sister lived in Lā'ie, and there came a time when there were no fish to be had. She sent her husband to visit Ihupala'ai, who was kind enough to send the fish following his brother-in-law on his trip back to Lā'ie.

This story is associated with a proverb or poetical saying identified with Honouliuli:

The fish fetched by the wind.

Ka i'a hali a ka makani

The '*anaeholo*, a fish that travels from Honouliuli, where it breeds, to Kaipāpa'u, on the windward side of O'ahu. It then turns about and returns to its original home. It is driven closer to shore when the wind is strong. [Pukui 1983:145]

Pukui et al. (1974:68) give the name of the husband in this story as Lā'ie and the name of the wife as Pala'ai, which ties into the name of the west loch of Pearl Harbor, called Kaihu o Pala'ai, "the nose of Pala'ai." Another version has a woman named Awawalei (an alternate version for the name of Pearl Harbor), who had a brother named Laniloa (the point on Lā'ie at which the mullet stops its migration and makes its way back to Pearl Harbor), and another brother (a mullet) who lived with an eel named Papapūhi, which relates to the name of the fishpond in the tale called Kapapapūhi (*Ka Loea Kālai'āina*, Oct. 21, 1899).

3.1.2 Hō'ae'ae, Waikele, Waipi'o and Waiawa Ahupua'a

Place names or *wahi pana* ("legendary place" Pukui and Elbert 1986: 376) are an integral part of Hawaiian culture. "In Hawaiian culture, if a particular spot is given a name, it is because an event occurred there which has meaning for the people of that time (McGuire 2000:23)." The

wahi pana were then passed on through language and the oral tradition, thus preserving the unique significance of the place. Hawaiians named all sorts of objects and places, points of interest which may have gone unnoticed by persons of other cultural backgrounds. Hawaiians named taro patches, rocks, and trees that represented deities and ancestors, sites of houses and *heiau* (places of worship), canoe landings, fishing stations in the sea, resting places in the forests, and the tiniest spots where miraculous or interesting events are believed to have taken place.

Place Names of Hawai‘i (Pukui et al. 1974) was used as the primary source for all place name translations. In some cases, where there were no known translations, a literal translation of the place name was made using the *Hawaiian Dictionary* (Pukui and Elbert 1986) or from another source. The intent of the author is to merely present the available information and let the readers come to their own conclusions.

3.1.2.1 Hō‘ae‘ae Place Names

Hō‘ae‘ae is bound by the on the *makai* side by the north shore of Pearl Harbor’s West Loch, by a trail running along the eastern edge of Honouliuli Gulch on the west side, and by the western side of Waikele Gulch and a trail on the east side (see Figure 11). The *mauka* edge of the ahupua‘a does not extend to the Ko‘olau Mountains, but is “cut off” by Honouliuli to the west and Waikele to the east. There are references to a Hō‘ae‘ae Stream in traditional literature. Pre-contact and early post-contact agriculture focused on the spring-fed floodplains adjacent to West Loch. Hō‘ae‘ae means “to make soft or fine” according to *Place Names of Hawai‘i* (Pukui et al. 1974:47). Pukui et al. do not explain why the ahupua‘a is called this name, but do mention that there was a famous *pōhaku* (stone) called Pōhaku-Pili on the boundary between Hō‘ae‘ae and Waikele. Another source (Thrum 1922:632) says Hō‘ae‘ae s means “to pulverize.”

3.1.2.2 Waikele Place Names

The next ahupua‘a to the east is Waikele Ahupua‘a, which extends from the north and eastern shore of West Loch to a boundary point between the District of Wahiawā and the ahupua‘a of Waipi‘o on the *mauka* side. It is at this boundary point that Sterling and Summers (1978:137), believe was the *former* location of a famous *pōhaku* called O‘ahunui, a stone shaped like the island of O‘ahu. Waikele is watered by Waikele Stream; the ridge on the east side of the stream marks the boundary with Waipi‘o. In upper Waikele, the stream is fed by two tributary streams, from the west Wai‘eli (possibly “dug water”) and from the east Waikakalaua (“water [rough] in rain”). Waikele means “muddy water,” probably a reference to this long stream. There were other names for the lower part of the stream, shown as Kapakahi (“crooked”) Stream on some maps, and referred to as Poniohua (possibly, “anointed on the night of Hua; Thrum 1922:667) Stream in some legends (Mauricio 1997:9).

The most famous location in Waikele is Waipahu Spring (“bursting water”). The waters of this spring were used to irrigate many of the ancient taro patches on the Waikele flood plain and later the rice and sugar cane crops. As a town and sugar mill expanded around it, the entire *makai* area of Hō‘ae‘ae and Waikele became known as Waipahu, and the older names were no longer used. A resident clarified this change in names:

...“Waipahu”...is not a tract of land, but only a spring located in Waikele. The Oahu Railway Company is the culprit responsible for misuse and confusion, when

it built its station at Kaohai and called [it] “Waipahu Station” The Oahu [Sugar Plantation] Mill is situated on the plateau of “Keonekuilimalaulaoewa” (the arm-in-arm-plateau of ewa), Waikele. [Simeon Nawaa, in *Honolulu Star Bulletin* Oct. 16, 1956, cited in Sterling and Summers 1978:1]

Above the spring was a rock face called Pōhaku-pili (clinging stone), which was said to have been placed there by the Hawaiian pig-god, Kamapua‘a (Mauricio 1997:7). There were four *heiau* in Waikele, two in the lowland area, just north of the present H-1 Interstate Highway, and two in the uplands, near the head of Kīpapa Gulch. The two lower *heiau*, Mokoula and Hapupu, had been completely destroyed by or in the early 20th century, but McAllister found (or was told of) remnants of the two upper *heiau*, Moaula, and the Heiau of ‘Umi, during his survey of prominent O‘ahu archaeological sites in the early 1930s.

3.1.2.3 Waipi‘o Place Names

To the east of Waikele is Waipi‘o, which means “curved, winding water” (Sterling and Summers 1978:1), probably a reference to the curving shorelines of the Middle Loch of Pearl Harbor, with its many adjacent fishponds. The loch waters were extensively used for gathering limu (seaweed), shellfish and other invertebrates, and fish. After Honouliuli, Waipi‘o is the largest next largest *ahupua‘a* in ‘Ewa, extending all the way from the tip of Waipi‘o Peninsula, between the West and Middle Lochs of Pearl Harbor, up to the boundary with the Ko‘olau Mountains. The major stream/gulch of Waipio is called Kīpapa (“placed prone”), but there are two other gulches in the upland area, Panahakea, and Pānakauahi (“touched by the smoke”). Keakua‘ōlelo was the name of a *heiau* in Pānakauahi Gulch. Pu‘u Ka‘aumakua is the highest peak, marking the boundary point between Waipi‘o, the Wahiawā District, and the Ko‘olaupoko District. At the *mauka* western corner of the *ahupua‘a*, a secondary peak on the Waipi‘o/Waiawa border was called Pu‘u Kamana (“hill [of] the supernatural power”). There was once a *heiau* in the area between Farrington Highway and the coast, called Ahu‘ena (“red hot heap”). When Thrum (1907:46) listed it in 1907, he noted that only the foundations remained. John Papa ‘Ī‘ī was once the custodian of the idols in the *heiau*. There were several fishponds on the Waipi‘o coast. Two of the largest were Loko (‘pond’) ‘Eo and Loko Hanaloa (“kong bay”).

3.1.2.4 Waiawa Place Names

The easternmost *ahupua‘a* traversed by the Construction Phase I project area is Waiawa Ahupua‘a, which like Waipi‘o extends from Pearl Harbor (Middle Loch) to the Ko‘olau Mountains. In the lower section, the *ahupua‘a* is watered by Waiawa Stream, which in the upper portion splits into Waiawa and Mānana Streams. Near this junction was a long ridge called Lae Pōhaku (“stone point”), the boundary line between Waiawa and Mānana. At this junction, McAllister recorded a *heiau* called Puoiki. Some historic maps also have a peak called Pu‘u Pōhaku (“stone hill”) at the same elevation as Lae Pōhaku, but on the Waiawa/Waipi‘o boundary.

The meaning and correct pronunciation of Waiawa is in dispute. It is variously spelled Waiawa or Wai‘awa, which leads to different interpretations. *Awa* is the word for milk fish, while ‘*awa* is the word to the native ‘*awa* (*Piper methysticum*) plant, which was used to make a mild narcotic drink by the Hawaiians.

In a portion of a chant for Kūali'i (Fornander 1917, *History of Kualii*, Vol. IV, Part II:394-400), Waiawa is noted for its *awa* fish, *E ku 'u kaua i ka loko awa—o Waiawa*, translated as “Let us cast the net in the awa-pond—of Waiawa.” This would be no surprise as the fish ponds of Waiawa, such as Kuhialoko, were well known for their productivity.

Other traditional accounts suggest that Waiawa may have been acknowledged in early times as the site of a special variety of the 'awa

I ka wa i hiki mai ai ua eueu nei a ku ma ka puka o kahi e komo ai i loko o ua kuahiwi nei o Konahuanui, aia noi na makana a pau ma ka lima o Keanuenue, oia hoi ka puua-pukoa, he puua ehu keia o ka hulu, a he pu awa popolo, aole i laha nui keia awa ma keia pae aina, aia nae keia awa e ulu nei i keai wa ma uka o Waiawa ma Ewa ae nei.

...When the wondrous maiden [Keaomelemele] arrived at the entrance to the mountain of Konahuanui, all the offerings were in charge of Ke-anuenue, a puko'a or reddish brown pig, a clump of dark 'awa [*pu 'awa pōpolo*] which was not common in these islands. This variety of 'awa now grows in the upland of Waiawa, down here in 'Ewa. [Manu 2002:50, 138; originally published in *Ka Nūpepa Kū'oko 'a*, Jan. 17, 1885]

A *kupuna* who grew up in Waiawa and lives there still, Tin Hu Young, suggested a different origin of the name Waiawa. During his interview, he gave this explanation:

...In fact, the name 'Wai'awa' means water and 'awa. You know the meaning of 'awa? 'Awa is that kava root that you drink, Hawaiians call it 'awa. I kind of didn't like the idea they called it 'bitter water'. Because 'awa is a little bitter when you drink it, so Wai'awa—Wai'awa Valley was an area known in the ancient days of harvesting 'awa root. It was a ceremonial drink that they had. Of course in the old days only the royalty used that root, until later on, and then the commoners would use it. Then you could sell it in the market and go buy it, like other things. So, Wai'awa was a source of that. But, I like to think that the meaning of 'bitter water' for the name Wai'awa, to me, could come from—because the area is the farther lot, the bottom on the lowland, mauka of Pearl Harbor. And when I used to watch the water, the rivulets would come twisting and turning like little 'awa roots, twisted. If you ever harvest that 'awa root, you got to see, its like a big root coral. It's all tangled into each other. And it reminds me, when it flooded down in the lowland, all these little rivulets, twisting and turning, like the 'awa root. But it's just my romantic— it's just because I live there. I don't want them to say, Ehh you live in bitter water? [Interview with T. H. Young, October 9, 2002, in Bushnell et al. 2003:9-10]

In addition to the milkfish (*Chanos chanos*), *awa* and the 'awa root (*Piper methysticum*), the Hawaiian word *awa* has a third meaning: of harbor, cove or channel or passage (Pukui and Elbert 1986:33). This suggests there may be some link between the rivulets described by Mr. Young and the *awa* or channels which reach the sea.

3.1.2.5 Legends of the Lowlands and Pearl Harbor

John Papa 'Ī noted that the trail in 'Ewa skirted the upper margin of the taro lands in central 'Ewa. Coming from Honolulu (see Figure 12):

The trail went down to the stream and up again, then went above the taro patches of Waiau, up to a *maika* field, to Waimano, to Manana, and to Waiawa; then to the stream of Kukehi and up to two other maika fields, Pueohulunui and Haupuu [in Waiawa]. At Pueohulunui [on the border of Waiawa and Waikele] was the place where a trail branched off to go to Waialua and down to Honouliuli and on to Waianae...

From Kunia [upland of Hō'ae'ae and Honouliuli] the trail went to the plain of Keahumoa [upland area for several *ahupua'a*], on to Maunauna [a peak in upper Honouliuli] and along Paupauewla [extreme *mauka* 'ili of Honouliuli], which met with the trails from Wahiawā and Waialua. ['Ī 1959:97]

Along this trail were several stone markers, called Nāpōhaku-luahine. These are described as old women who were changed into stones:

The names of these royal stones were Kahoaiai (also the name of an 'ili in Waiawa), Waiawakalea, Piliaumoa, Kahe'ekuluaikamoku, all chiefesses. Their four servants were Nohoana, Kikaeleke, Piliamo'o, Nohoanakalai. These were the guardians of the trail. [*Ka Loea Kālai'āina*, June 3, 1899; p. 18]

The writer describes the location of the stones:

Here is how the traveler can locate them. When you leave the bridge of Waiawa, for Honolulu, go up and then down an incline. The hill standing on the seaward side is Nuku-o-ka-manu. The next incline is Waiawa. Go up the ascent till you reach the top and above that, about two chains from the road you will find the stones. [*Ka Loea Kālai'āina*, June 3, 1899; p. 18]

There was a cave named Kapuna on Waipi'o Peninsula that was associated with a famous riddle. *No Kapuna ka hale noho ia e ke kai*, or "To Kapuna belongs the house, the sea dwells in it."

This cave is on the Waipio side and a sea passage separates Waipio and Waikele and Waikele and Honouliuli. The passage is obstructed by three small islands, a middle one and Manana and Laulaunui. These small islands in the middle of the passage to Honouliuli and inside and outside of these small islands is the sea of Kaihuopalaai [Hawaiian name for West Loch] where mullet lived till they whitened with age. [*Ka Loea Kālai'āina*, Oct. 7, 1899, translation in Sterling and Summers 1978:24]

Another famous cave of the area was Keanapua'a [in Halawa, opposite Waipi'o Peninsula], which means "the pig's cave," so named because Kamapua'a once slept there (Pukui et al. 1974:103). This cave was one of the places that the high king of O'ahu, Kahahana, hid after he had killed the priest Ka'opulupulu, thus angering the high chief of Maui, Kahekili.

In Waipi'o, 'Ewa, 'Ai'ai, the son of the fishing god, Kū'ula, was said to have established a *pōhaku i'a* (fish stone) at Hanapouli and a *ku'ula* (stone god used to attract fish) named Ahu'ena (Manu 1902:127).

Kamaika'ahui was a man who could take the form of a shark. In his human form, he had the mouth and teeth of a shark on his back. Whenever he got the chance at his home in Hāna, Maui or his home in Waikele, O'ahu, he would secretly change into his shark form, kill, and eat unsuspecting swimmers. Ahapau, the king of O'ahu, had promised to make king anyone who could drive Kamaika'ahui away from O'ahu. When Palila got to Waikele, he found Kamaika'ahui. At one look of Palila's war club, the shark-man ran away and tried to jump into the sea. But every time he tried to escape, Palila threw his war club, again and again, until finally he killed Kamaika'ahui (Fornander 1919, *Story of Palila*, Vol. V, Part II:373-374).

In the story of Ka'ehuikimanō-o-Pu'uloa (Thrum 1923:301) the shark from Puna, Hawai'i Island goes to visit the famous Ka'ahupāhau, chiefess of the shark gods of Pu'uloa (Pearl Harbor) and finds her and her entourage at Waiawa. Again, no details are given. Other references associating the Ka'ahupāhau shark royal court with Waiawa include the naming of a fishpond at Pearl Harbor "Kuhialoko" after the name of a butler or purveyor to the shark queen (*Saturday Press*, January 12, 1884). Ka'ahupāhau's brother, Kahi'uka was said to have a cave in Waiawa below the former home of the Reverend Bishop, who was the pastor in 'Ewa (*Ke Au Hou* Dec. 14, 1910, translation in Sterling and Summers 1978:18).

Pukana wai o Kahuku.

The water outlet of Kahuku.

Refers to the outlet of an underground stream that once flowed from Kahuku to Waipahu, O'ahu [Pukui 1983:299].

The most famous *wahi pana* ("legendary place) in Waikele was the Waipahu Spring. Tapa was placed on a wooden board (also called an anvil), and beaten by women with tapa sticks to smooth out the fibers. This pounding made a resonant sound, and women could often identify the owner of the board by the sound that was made. One day a woman in Kahuku on O'ahu took her favorite tapa board to a pool to clean it and left it at the side of the pool. The next day the board was missing. The woman first searched the windward districts of the island, but never heard the distinctive ringing sound of her own favorite board. After several months without finding her board, she traveled to the leeward side of O'ahu.

She went from Kahuku on the Koolau side to Kaneohe where she spent the night. There was no sign of the anvil in Koolau, because the sign she sought was the sound it made...She went on and spent the night at Wailupe but did not find hers. She heard other anvils but they were not hers. The night turned into day and she went on to Kapalama where she slept but did not hear what she sought till she came to Waipahu. [*Ka Loea Kalaiaina*, June 10, 1899; English translation in Sterling and Summers 1978:25]

At Waipahu Spring in the 'Ewa District, she finally heard the sound of her own board. She followed the sound to the uplands of Waikele and found a woman beating tapa on her board. The woman claimed that she had found the board one day floating on the water at a spring near her house. This legend illustrates the belief by the ancient Hawaiians that there were underground streams and passages that led from one side of the island to the other. In one version of this story,

the people of 'Ewa followed the woman back to Kahuku so that she could prove that the board was the same one she had lost. They wrapped a bundle of ti leaves and cast them into the pool near the house of the Kahuku woman. Then returning to 'Ewa, they saw the same bundle of ti leaves a few days later in Waipahu at the spring. Because of this, the Waipahu spring was called Ka-puka-na-wai-o-Kahuku, which means "Outlet of water from Kahuku."

3.1.2.6 Legends of the Inland Plain called Keahumoa

In several legends of 'Ewa, mention is made of the "plain of Keahumoa." John Papa 'Ī'i shows this plain opposite the trail to Pohakea Pass, stretching across the *ahupua'a* of Honouliuli and Hō'ae'ae (see Figure 12). McAllister (1933) states that the plain was west of Kīpapa Gulch in Waikele. It is also mentioned in legends of Waipi'o. Thus, this is probably a general name for the flat plain *mauka* of the productive floodplain area directly adjacent to Pearl Harbor.

Legend of Nāmakaokapao'o

Nāmakaokapao'o was a Hawaiian hero of legendary strength. Nāmakaokapao'o's mother was Pokai and his father was Kaulukahai, a great chief of Kahiki, the ancestral home of the Hawaiians. The two met in Hō'ae'ae and conceived their child there. The father returned to his home in Kahiki before the birth of his son, leaving his O'ahu family destitute. A man named Puali'i saw Pokai and married her. The couple then resided on the plains of Keahumoa, planting sweet potatoes. Nāmakaokapao'o was a small, brave child who took a dislike to his stepfather, and pulled up the sweet potatoes Puali'i had planted at their home in Keahumoa. When Puali'i came after Nāmakaokapao'o with an axe, Nāmakaokapao'o delivered a death prayer against him, and slew Puali'i, hurling his head into a cave in Waipouli, near the beach at Honouliuli (Fornander 1919, *Legend of Namakaokapao'o*, Vol. V, II:274-276).

Legend of Pikoi

Pikoi was a legendary hero, the son of a crow (*'alalā*) and brother to five god-sisters in the form of rats. He was famous for his ability to shoot arrows, and often made bets that he could hit rats from a long distance (Fornander 1917, *Story of Pikoiaakaalala*, Vol. IV, Part III:450-463). Pikoi's skill was commemorated in a saying (Pukui 1983:200):

| | |
|--------------------------------------|-------------------------------------|
| <i>Ku aku la i ka pana a</i> | Shot by the arrow of Pikoi-[son] |
| <i>Pikoi-a-ka-'alalā, keiki pana</i> | of-the-crow, the expert rat-shooter |
| <i>'iole o ke kula o Keahumoa.</i> | Of the plain of Keahumoa. |

Story of Palila

In the legend of the hero Palila, the famous warrior had a supernatural war club. He could throw the club a long distance, hang on to the end of it, and fly along the club's path. Using this power, he touched down in several places in Honouliuli, Waipi'o, and Waikele. One day he used his supernatural war club to carry himself to Ka'ena Point in Wai'anae, and from there east across the district of 'Ewa.

*Ha'alele keia ia Ka'ena, hele mai la a Kalena, a Pōhākea, Maunauna, Kānehōa,
a ke kula o Keahumoa, nana ia 'Ewa. Kū kēia i laila nānā i ke kū a ka ea o ka*

lepo i nā kānaka, e pahu aku ana kēia i ka la'au palau aia nei i kai o Honouliuli, kū ka ea o ka lepo, nu lalo o ka honua, me he olai la, makau nā kānaka holo a hiki i Waikele. A hiki o Palila, i laila, e pa'apu ana nā kānaka i ka nānā lealea a ke 'li'i o O'ahu nei, oai o Ahupau.

After leaving Ka'ena, he came to Kalena, then on to Pōhākea, then to Manuauna [a peak in Honouliuli], then to Kānehoa [a peak in Honouliuli], then to the plain of Keahumoa [upland plain from Honouliuli to Waipi'o] and looked toward 'Ewa. At this place he stood and looked at the dust as it ascended into the sky caused by the people who had gathered there; he then pushed his war club toward Honouliuli. When the people heard something roar like an earthquake they were afraid and they all ran to Waikele. When Palila arrived at Waikele he saw the people gathered there to witness the athletic games that were being given by the king of O'ahu, Ahupau by name. [Fornander 1918, *Legend of Palila*, Vol. V, Part I:142-143]

The Demi-god Maui

In the stories of the demi-god Maui, Keahumoa is the home of Maui's grandfather, Kuolokele (Kū-honeycreeper). One day, Maui's wife, Kumulama, was stolen by the chief Peapeamakawalu, called eight-eyed-Pea-Pea, who is identified in the creation chant *Kumulipo*, as the octopus god (Beckwith 1951:136). The chief disappeared with Kumulama in the sky beyond the sea, and escaped so quickly that Maui could not catch him. To recover his wife, Maui's mother advised him to visit the hut of his grandfather at Keahumoa:

Maui went as directed until he arrived at the hut; he peeped in but there was no one inside. He looked at the potato field on the other side of Poha-kea, toward Hono-uli-uli, but could see no one. He then ascended a hill, and while he stood there looking, he saw a man coming toward Waipahu with a load of potato leaves, one pack of which, it is said, would cover the whole land of Keahumoa. [Thrum 1923:253-254]

Kuolokele made a *moku-manu* ("bird-ship") for Maui, who entered the body of the bird and flew to Moanalaha, the land of the chief Peapeamakawalu. This chief claimed the bird as his own when it landed on a sacred box, and took it with him into the house he shared with Maui's wife. When Peapeamakawalu fell asleep, Maui killed him, cut off his head, and flew away back to O'ahu with his wife and the chief's head (Thrum 1923:252-259).

A man named Kaopele, born in Waipi'o, had a tendency to fall into deep trances for months at a time. While awake, he would create plantations of supernatural proportions. However, he was never able to enjoy the fruits of his labors because he would always fall into another deep sleep. During one profound slumber, Kaopele was believed to be dead; he taken to Wailua, Kaua'i to be offered as a sacrifice. Upon awakening, he married a woman named Makalani and stayed on Kaua'i. They had a son named Kalelealuaka, who was also blessed with supernatural powers. Kaopele instructed the boy in the arts of war and combat, which Kalelealuaka exhibited during two challenges with kings of Kaua'i. One day, Kalelealuaka decided to travel to O'ahu. A boy, Kaluhe, accompanied him and they paddled to Wai'anae. There, he met another companion who

he later named Keinoho'omanawanui, the sloven. The three traveled toward the old plantation called Keahumoe (Keahumoa), in the *mauka* regions of Waipi'o, that were formerly planted by Kaopele.

...the three turned inland and journeyed till they reached a plain of soft, whitish rock, where they all refreshed themselves with food. They kept on ascending, until Keahumoe lay before them, dripping with hoary moisture from the mist of the mountain, yet as if smiling through its tears. Here were standing bananas with ripened, yellow fruit, upland *kalo*, and sugar cane, rusty and crooked with age, while the sweet potatoes had crawled out of the earth and were cracked and dry. [Emerson 1998:86-87]

To determine the best settlement location, Kalelealuaka shot an arrow to see where it would land. He then built a mountain house and called it "Lelepua" (meaning "arrow flight"), after his magic arrows. One night, Kalelealuaka makes known his wish:

The beautiful daughters of Kakuhihewa to be my wives; his fatted pigs and dogs to be baked for us; his choice *kalo*, sugar cane, and bananas to be served up for us; that Kakuhihewa himself send and get timber and build a house for us; that he pull the famous *awa* of Kahuone; that the King send and fetch us to him; that he chew the *awa* for us in his own mouth, strain and pour it for us, and give us to drink until we are happy, and then take us to our house. [Emerson 1998:89]

Upon hearing such a request, the *mō'ī* Kākuhihewa confers with his priests and instead of killing Kalelealuaka, decides to test him in battle with Kūali'i. Kalelealuaka proves worthy in battle and is given charge of Kākuhihewa's kingdom.

Hi'iaka, sister to the Hawaiian volcano goddess, Pele

The goddess, Hi'iaka, sister of the volcano goddess Pele, passed through 'Ewa and met women stringing *ma'o* flowers to make *lei*. Hi'iaka offered a chant, making known her wish for a lei around her own neck.

| | |
|--|---------------------------------------|
| <i>E lei ana ke kula o Ke'ahumoa i ka ma'o</i> | The plains of Keahumoa are |
| | garlanded with <i>ma'o</i> |
| <i>'Ohu'ohu wale nā wāhine kui lei o</i> | The lei-stringing women of the forest |
| <i>ka nahele</i> | are festively adorned |
| [Ho'oumāhiehiemalie 2006a:287; 2006b:268] | |

3.1.2.7 Legends of the Uplands

Ke akua 'ōlelo

Ke akua 'ōlelo is described as a local god of Pānakauahi Gulch, who from his *heiau* in Pānakauahi spotted a woman of high rank from Hawai'i hide her *lei niho palaoa* in a hole of a rock, a rock named *pōhaku huna palaoa*, located on the plain of Punahawe. Ke akua 'ōlelo assured the woman that when the time came for her descendants to find the necklace, he would guide them (*Ka Loea Kālai'āina*, July 22, 1899, translation in Sterling and Summers 1978:22).

Ke akua 'ōlelo also appears in another *mo'olelo*, the legend of the children and the secret eating place, Ka'aimalu. Pūpūkanioe, a boy and Nāluahōkū, a girl who grew up with Pana'iahakea, a tributary gulch located on the boundary of Waipi'o and Waiawa, travel frequently to Kualaka'i to fish. The usually caught plenty of fish. However, on one particular day, they only caught one fish, a *palani* which was considered a woman's fish. As they were on their long journey home, they were both caught up in hunger and the girl insisted they both eat the *palani* secretly. However, Ke akua 'ōlelo was watching and announced their sharing of the woman's fish. This was considered the first time the eating *kapu* was broken, and the spot where they ate is called Ka'aimalu, the secret eating place (*Ka Loea Kālai'āina*, July 22, 1899: p.15, translation in Sterling and Summers, 1978:7).

Legend of Maihea

One story that suggests that Waiawa was named for the 'awa plant is the legend of Maihea.

...it was here in 'Ewa that Kāne and Kanaloa were invoked by a planter of sweet potatoes, taros, and 'awa named Maihea. This man, living in the upland of Wai'awa, [Handy and Handy use the glottal stop] when he had prepared his meal and his 'awa, would pray:

O unknown gods of mine,
Here are 'awa, taro greens and sweet potatoes
Raised by me, Maihea, the great farmer.
Grant health to me, to my wife and to my son.
Grant us *mana*, knowledge and skill.
Amama. It is freed.

[Handy and Handy 1972:472]

Another more complete version of the story of Maihea is shared in the June 3, 1899 edition of *Ka Loea Kālai'āina*. In this version, Maihea lived at Waimalu, cultivating sweet potatoes and taro. However, it was on a hill in the upland of Waiawa where he planted his 'awa. He prayed daily to the unknown gods with his offering of 'awa, taro greens and sweet potatoes. In answer to his prayer, Kāne and Kanaloa sent a whale to Waimalu. All the people of the area came to marvel at the sight. The beached whale waited almost four weeks until the son of Maihea, Ula-a-Maihea could resist no longer, and against the wishes of his parents, he went down to the shore to see the spectacle. Once there, he followed the children climbing on to the whale. The whale began to move and Ula-a-Maihea was taken to Kahiki where he was trained in the *kahuna* arts under Kāne and Kanaloa.

The parents grieved for the boy, until two strangers came to the door. Maihea invited them to his house and offered them 'awa, saying his usual prayer to the unknown gods. At this time, Kāne and Kanaloa revealed that they were the unknown gods and that they had answered his prayer by sending their son to Kahiki to learn the arts of the *kahuna*.

This was the beginning of the travels of these gods on earth and this was also the time when the boundaries of Ewa were made as I told you when I mentioned Pohaku-pili. On their return after dividing the land, they came to the top of Haupuu, (that is the present site of the Kahikuonuolani Church at Waiawa) they

turned to look at ‘Ewa and when they saw the fish ponds at Waiawa, they said, “May the fish ponds down at Waiawa be as the stars in the sky above. May there be mullets at Kuhia-loko, fine sea weed at Kuhia-waho, salt at Ninauele, the single fruited coconut at Hapenui, the taro greens at Mokaalika and the water of Kaaimalu, to remove the bitterness of the ‘awa of Kalahikuola. [Ka Loea Kālai‘āina, June 3, 1899:9, English summary in Sterling and Summers 1978:5]

3.1.2.8 Traditional Accounts of Pre-Contact and Early Post-Contact Hawaiian Battles

The rich resources of the Pearl Harbor lochs, the shoreline fishponds, the numerous springs, and the irrigated lands along the streams made central ‘Ewa a prize for competing chiefs. Battles were fought for and on ‘Ewa lands, sometimes from competing O‘ahu chiefs, and sometimes by invading chiefs from other islands.

Mā‘ilikūkahi and the Invasion of the Hawaiian Chiefs (16th Century)

Born *ali‘i kapu* at the birthing stones of Kūkaniloko (Kamakau 1991a:53), Mā‘ilikūkahi became *mō‘ī* of O‘ahu around A.D. 1520 to 1540 (Cordy 2002:19). Mā‘ilikūkahi was popular during his reign and was remembered for initiating land reforms, which brought about peace, and for encouraging agricultural production, which brought about prosperity. He also prohibited the chiefs from plundering the *maka‘āinana*, with punishment of death (Kamakau 1991a:55).

Mā‘ilikūkahi’s peaceful reign was interrupted by an invasion which would change Waipi‘o ‘Uka forever. The following is a description of the Battle of Kīpapa by Fornander:

I have before referred to the expedition by some Hawaii chiefs, *Hilo-a-Lakapu*, *Hilo-a-Hilo-Kapuhi*, and *Punaluu*, joined by *Luakoa* of Maui, which invaded Oahu during the reign of *Mailikukahi*. It cannot be considered as a war between the two islands, but rather as a raid by some restless and turbulent Hawaii chiefs...The invading force landed at first at Waikiki, but for reasons not stated in the legend, altered their mind, and proceeded up the Ewa lagoon and marched inland. At Waikakalaua they met *Mailikukahi* with his forces, and a sanguinary battle ensued. The fight continued from there to the Kīpapa gulch. The invaders were thoroughly defeated, and the gulch is said to have been literally paved with the corpses of the slain, and received its name “Kīpapa,” from this circumstance. *Punaluu* was slain on the plain which bears his name, the fugitives were pursued as far as Waimano, and the head of *Hilo* was cut off and carried in triumph to Honouliuli, and stuck up at a place still called *Poo-Hilo*. [Fornander 1996:89-90]

Apparently, Kīpapa Gulch in Waipi‘o was named after this particular battle, or more likely renamed. In old Hawai‘i, places were often given names based on historic events. The literal translation of the word *kīpapa* is “to be paved,” as in “paved with the corpses of the slain.”

The Rivalry of the Waikīkī and Waikele Chiefs (17th Century)

Around A.D. 1600-1620, the entire island of O‘ahu was united under the rule of one woman, an *ali‘i* named Kala‘imanuia (Cordy 2002:30). Before her death, she divided her kingdom between four of her children, giving the districts of Kona and Ko‘olaupoko to Kū, the *ahupua‘a*

of Kalauao, 'Aiea, Moanalua, and Hālawā to Ka'ihikapu, the districts of 'Ewa and Wai'anae to Ha'o, and the districts of Waialua and Ko'olaupā to her daughter Kekela. To Kū, she passed on her title of *mō'ī*, or king, so that the other three were still subject to their eldest brother. Kū, however, was greedy and began to try to take the lands allotted to his siblings away from them. Ha'o joined with this brother Ka'ihikapu in a battle defending against an attack by Kū, a battle in which Kū was slain. Ka'ihikapu then became *mō'ī* and was a good king, taking care of his subjects and making frequent tours around the island to observe the people. On one of these circuits, he visited his brother Ha'o at his court in Waikēle and grew jealous of the riches at his brother's home. Ka'ihikapu sent a large man-eating shark that had been caught near his court in Waikēle to his brother as a gift so that Ha'o could use it as a sacrifice to dedicate to the gods at his *heiau* in Waikēle. Ka'ihikapu's forces attacked Ha'o and his priests at the temple as they were unarmed and busy with the dedication ceremonies (Fornander 1996:270-271).

There are other versions of this story that describe the shark as similar to the gift of the Trojan Horse, but Fornander (1996:271) believes that these "embellishments" may have been made in the post-contact period. Two versions of this more elaborate story are presented below.

There is a saying concerning this rivalry between the two brothers: "*Ke one kuilima laula o 'Ewa*. The sand on which there was a linking of arms [*kuilima*] on the breadth of 'Ewa." This saying is in reference to how Ka'ihikapu took Ha'o's lands from him.

The chiefs of Waikēle and Waikēle were brothers. The former wished to destroy the latter and laid his plot. He went fishing and caught a large *niuhi* [man-eating shark], whose skin he stretched over a framework. Then he sent a messenger to ask his brother if he would keep a fish for him. Having gained his consent, the chief left Waikēle hidden with his best warriors in the "fish." Other warriors joined them along the way until there was a large army. They surrounded the residence of the chief of Waikēle and linked arms [*kuilima*] to form a wall, while the Waikēle warriors poured out of the "fish" and destroyed those of Waikēle. [Pukui 1983:191]

In a different version of this story (Kamakau 1991a:61-67), Ka'ihikapu, cut open the shark captured from the Waikēle waters, removed all the meat, but left the skin and bones. He sent a messenger to his brother, Ha'o, chief of Waikēle, offering the shark to him. Ha'o quickly agreed, and waited for the shark to be delivered to Waikēle, where he planned to place it at his *heiau* as an offering to the gods. When the shark was placed on the altar, Ka'ihikapu and his men jumped out and slaughtered his brother and all of the priests. The slain men were then put into the shark and offered as a sacrifice at the former *heiau* of Waikēle. Kamakau (1991a:67) says that the name of this place of slaughter in Waikēle was called Paumakua. Thrum (1922:665) translates this place name as "all fiery eyed." McAllister (1933:106) located this destroyed *heiau*, called Hapupu, at the site then occupied by the Waipahu plantation stables.

The Overthrow of Kahahana and his Escape to 'Ewa (18th Century)

Thomas Thrum (1998:203-214) translates the legend of the *kahuna*, or priest, Ka'ōpūlupulu, who lived in Waimea. Kahekili, the king of Maui sent his foster son, Kahahana to rule O'ahu, around the year A. D. 1779 (Cordy 2002:42). Kahahana set up his royal compound in Waikēle,

and commanded the priest Ka'ōpulupulu to attend him there. At first Kahahana valued the wisdom of this wise priest, but after several years, Kahahana began to be cruel to the people, and in protest Ka'ōpulupulu left Waikīkī to return to his home in Waimea. This angered the king, who sent messengers to order Ka'ōpulupulu and his son Kahulupue, to come to Wai'anae, where Kahahana then resided.

At Wai'anae, the two men were placed into a special grass hut, one tied to the end post and one tied to the corner post of the house. The next day, Kahahana ordered his men to torture the son, stabbing his eyes and stoning him while his father watched. When Ka'ōpulupulu saw this, he commanded his son to flee into the sea, saying these words (Pukui 1983:44), which contained a prophecy.

| | |
|-------------------------------------|--|
| <i>E nui ke aho, e ku'u keiki,</i> | Take a deep breath, my son, and lay |
| <i>a moe i ke kai, no ke kai la</i> | yourself in the sea, for then the land |
| <i>ho'i ka 'āina.</i> | shall belong to the sea. |

When Kahekili heard of this outrage, he sent an army to O'ahu to depose Kahahana. The O'ahu force was defeated around the year 1795 (Cordy 2002:19), and Kahahana, his wife, Kekuapoi, and his friend Alapai, fled westward, hiding at many places in 'Ewa.

Upon the arrival here at Oahu of Kahekili, Kahahana fled, with his wife Kekuapoi, and friend Alapai, and hid in the shrubbery of the hills. They went to Aliomanu, Moanalua, to a place called Kinimakalehua; then moved along to Keanapuaa and Kepookala, at the lochs of Puuloa, and then from there to upper Waipio; thence to Wahiawa, Helemano, and on to Lihue [upper plain of Honouliuli, Ho'ae'ae, and Waipi'o]; thence they came to Poohilo, at Honouliuli, where they first showed themselves to the people and submitted themselves to their care.

Through treachery, Kahahana was induced to leave Pō'ohilo, Honouliuli and was killed on the plains of Hō'ae'ae [Thrum 1998:213-214]. While hiding in Pō'ohilo, and 'ili of Honouliuli:

...report thereof was made to Kahekili, the king, who thereupon sent Kekuamanoha, elder brother of Kekuapoi, the wife of Kahahana, with men in double canoes from Waikiki, landing first at Kupahu, Hanapouli, Waipio, and had instructions to capture and put to death Kahahana, as also his friend Alapai, but to save alive Kekuapoi. When the canoes touched at Hanapouli, they proceeded thence to Waikele and Hoaeae, and from there to Poohilo, Honouliuli, where they met with Kahahana and party in conference. At the close of the day Kekuamanoha sought by enticing words to induce his brother-in-law to go un with him and see the father king and be assured of no death condemnation, and by skilled flattery he induced Kahahana to consent to his proposition, whereupon preparation was made for the return. On the following morning, coming along and reaching the plains of Hoaeae, they fell upon and slew Kahahana and Alapai there, and bore their lifeless bodies to Halaulani, Waipio, where they were placed in the canoes and brought up to Waikiki and placed up in the coconut trees by King Kahekili and his priests from Maui, as Kaopulupulu had been. Thus was fulfilled the famous saying of the Oahu priest in "all its truthfulness." According to the

writings of S. M. Kamakau and David Malo, recognized authorities, the thought of Kaopulupulu as expressed to his son Kahulupue, “This land is the sea’s,” was in keeping with the famous prophetic vision of Kekiopilo that “the foreigners possess the land,” as the people of Hawaii now realize. [Manu 1904:112-113]

Kūali‘i’s Defeat of the ‘Ewa chiefs (19th Century)

In the first half of the 18th century, the island of O‘ahu was ruled by a chief named Kūali‘i, who consolidated his supreme power over the entire island by defeating the chiefs of ‘Ewa (Cordy 2002:32). Kūali‘i met the competing army on the plains of Keahumoa, but the ‘Ewa chiefs surrendered when they saw Kūali‘i’s overwhelming forces, and they ceded the lands of Ko‘olauloa, Ko‘olaupoko, Waialua, and Wai‘anae to him (Fornander 1917, *History of Kualii*, Volume IV, Part II:366, 400).

During the second half of the 18th century, Waipi‘o again became a focus of political intrigue and warfare. In 1783, the forces of the Maui chief Kahekili gained control of the island of O‘ahu by defeating the *mō‘ī*, Kahahana, “from the powerful ‘Ewa chiefs’ line” (Cordy 1981:207). Kahekili set up his friend Hu‘eu over the districts of ‘Ewa, Waianae, and Ko‘olauloa. The defeated O‘ahu chiefs plotted to kill the Maui chiefs, and succeeded in killing Hu‘eu, but Kahekili escaped.

The murderers of Hu‘eu were found in Waipi‘o, “therefore Ewa became famed as a land of deadly plots” (*Ka Nūpepa Kū‘okok‘a* Dec. 5, 1868; HEN Vol. I, p. 2734, cited in Sterling and Summers 1978:3). Waipi‘o was given the name “Waipi‘o *kīmopō*,” or “Waipi‘o of secret rebellion” (Pukui 1983:319) due to all the covert planning (Kamakau 1961:138). Following the plan’s failure, Kahekili took revenge on the ‘Ewa and Kona districts:

...and when Ka-hekili learned that Elani of ‘Ewa was one of the plotters, the districts of Kona and ‘Ewa were attacked and men, women, and children were massacred, until the streams of Makaho and Niuhelewai in Kona and of Kahoa‘ai‘ai in ‘Ewa were choked with the bodies of the dead, and their waters became bitter to the taste, as eyewitnesses say, from the brains that turned the water bitter. All the O‘ahu chiefs were killed and the chiefesses tortured. [Kamakau 1992:138]

If Kamakau is correct, the population of Waipi‘o would have been decimated during the 1780s. Kahekili and the Maui chiefs retained control of O‘ahu until the 1790s. In 1794, Kahekili died at Waikīkī. His son, Kalanikūpule, was defeated the following year at the battle of Nu‘uanu by Kamehameha, who distributed the O‘ahu lands - including Waipi‘o Ahupua‘a - among his favorite followers which resulted in the displacement of many families. “Land belonging to the old chiefs was given to strange chiefs and that of old residents on the land to their companies of soldiers, leaving the old settled families destitute” (Kamakau 1992:376-377).

3.2 Historical Background

3.2.1 ‘Ewa as a Political Center

There are many documented references that chiefs resided in ‘Ewa and that it was a political center in the past. Oral accounts of chiefs and chiefesses recorded by noted Hawaiian historian Samuel Kamakau date back to at least the 12th century. He tells us that:

The chiefs of Līhu‘e, Wahiawā, and Halemano on O‘ahu were called *lō ali‘i*. Because the chiefs at these places lived there continually and guarded their *kapu*, they were called *lō ali‘i* [from whom a “guaranteed” chief might be obtained, *loa‘a*]. They were like gods, unseen, resembling men. [Kamakau 1991a:40]

By ca. A.D. 1320, ‘Ewa, along with Kona, and Ko‘olaupoko, were the dominant political districts, ruled by the sons of a chief named Māweke (Cordy 2002:21). ‘Ewa at this time included the traditional districts of ‘Ewa, Wai‘anae, and Waialua (Fornander 1996:48). Around A.D. 1400, the entire island was ruled by King La‘akona. Chiefs within his line, the Māweke-Kumuhonua line, reigned until about A.D. 1520-1540, with their major royal center in Līhu‘e, in ‘Ewa. (Cordy 2002:24). Haka was the last chief of the Māweke-Kumuhonua line. He was slain by his men at the fortress of Waewae near Līhu‘e (Kamakau 1991a:54; Fornander 1996:88). Power shifted between the chiefs of different districts from the 1500s until the early 1700s, when Kūali‘i achieved control of all of O‘ahu by defeating the Kona chiefs, then the ‘Ewa chiefs, and then expanding his control on windward Kaua‘i. Peleiholani, the heir of Kūali‘i, gained control of O‘ahu ca. 1740, and later conquered parts of Moloka‘i. He was ruler of O‘ahu until his death in ca. 1778 when Kahahana, of the ‘Ewa line of chiefs was selected as the ruler of O‘ahu (Cordy 2002:24-41).

A 14th century account speaks of the reign of Mā‘ilikūkahi, an *ali‘i kapu* who was born at Kūkaniloko in Wahiawā around the 14th century A.D. (Pukui et al. 1974:113). Upon consenting to become *mō‘ī* (king) at the age of 29, he was taken to Kapukapuākea Heiau (temple) at Pa‘la‘akai in Waialua to be consecrated. Soon after becoming king, Mā‘ilikūkahi was taken by the chiefs to live at Waikīkī. The story tells us that he was probably one of the first chiefs to live there. Up until this time the chiefs had always lived at Waialua and ‘Ewa. Under his reign, the land divisions were reorganized and redefined.

In reference to the productivity of the land and the population during Mā‘ilikūkahi’s reign, Kamakau writes:

In the time of Mā‘ili-kūkahi, the land was full of people. From the brow, *lae*, of Kulihemo to the brow of Maunauna in ‘Ewa, from the brow of Maunauna to the brow of Pu‘ukea [Pu‘u Ku‘ua] the land was full of chiefs and people. From Kānewai to Halemano in Wai‘alua, from Halemano to Paupali, from Paupali to Hālawa in ‘Ewa the land was filled with chiefs and people. [Kamakau 1991a:55]

The picture presented here is that the whole *moku* (district) of ‘Ewa was one of prosperity and productivity and the land was heavily populated. ‘Ewa continued to be a political center until the 18th century when Kahahana, a Maui chief, was chosen by the O‘ahu chiefs to rule over the whole island. Somewhere between 1883 and 1885, Kahahana was killed by Kahekili of Maui.

Kahahana's father, 'Elani, along with other O'ahu chiefs, plotted to kill Kahekili and his chiefs who were residing at Kailua, O'ahu, as well as his chiefs residing at 'Ewa and Waialua. The plot was discovered by Kahekili and a messenger was sent to warn Hū'eu at Waialua. For some reason, the messenger never reached Hū'eu and he and his retinue were killed. This slaughter became known as the *Waipi'o Kīmopō* or the Waipi'o assassination because it originated there. Kahekili avenged the death of Hū'eu by pillaging and destroying the districts of Kona and 'Ewa. It is said that the streams of Makaho and Niuhelewai in Kona, as well as Hō'ae'ae in 'Ewa were choked with the bodies of the slain. It was during this time that the O'ahu chiefly lines were nearly exterminated. It is said that one of the Maui chiefs, Kalaikoa, used the bones of the slain to build a wall around his house at Lapakea in Moanalua. The house was known as Kauwalua and could be seen as one passed by the "old upper road to 'Ewa" (Fornander 1996:290).

Even though Waikī was a favorite playground for the chiefs of Kona, as with 'Ewa chiefs, there were no deep harbors where large ships could enter port. With the introduction of trade and foreign goods, along with Kamehameha's unification of the islands, attention shifted to Kou (old name for Honolulu, used until about 1800) (Pukui et al. 1974:117), which had a deep enough harbor for ships to pull in and anchor. Kou became the center of activity as royalty moved away from the outer districts toward the center of commerce. The general populace also moved away from the rural areas, as they too became dependent on a cash economy. Archibald Campbell writes about O'ahu in 1809:

Although only of secondary size, it [O'ahu] has become the most important island in the group, both on account of its superior fertility, and because it possesses the only secure harbour to be met with in the Sandwich Islands.

In consequence of this, and of the facility with which fresh provisions can be procured, almost every vessel that navigates the North Pacific puts in here to refit. This is probably the principal reason why the king has chosen it as his place of residence. [Campbell 1967:109-110]

'Ewa is depicted as an abundant and populated land where chiefs of distinguished lineages were born and resided. The land was fertile and well fed by mountain streams that helped sustain the agricultural lifestyle needed to support the chiefs, their households and their people. An examination of the place names reveals that water was a very important factor in this district. Six of the twelve *ahupua'a* names begin with *wai*, the Hawaiian word for water (Waikele, Waipi'o, Waiawa, Waimano, Waiau, and Waimalu). The fact that there were so many fishponds in the 'Ewa District and in the Pu'uloa area, more than any other district on O'ahu, indicates that agricultural/aquacultural intensification was a direct link to the chiefs who resided there, and also to the increasing needs of the population. 'Ewa's part in the politics and history of O'ahu is of noteworthy importance.

3.2.2 Honouliuli Ahupua'a

3.2.2.1 Early Post-Contact Period – Late 18th to Mid-19th Centuries

In A.D. 1795, seventeen years after Captain James Cook made the first Western contact with the Hawaiian Islands, the great Hawaiian warrior Kamehameha completed his conquest of the island of O'ahu and then went on to consolidate his rule over all of the Hawaiian Islands. He

gave the *ahupua'a* of Honouliuli to Kalanimōkū, an early supporter, as part of the *panalā'au*, or conquered lands, with the right to pass the land on to his heirs rather than having it revert to Kamehameha (Kame'eleihiwa 1992:58, 112). Kalanimōkū subsequently gave the *ahupua'a* to his sister, Wahinepi'o.

Various Hawaiian legends and early historical accounts indicate that the *ahupua'a* (land division) of Honouliuli was once widely inhabited by pre-Contact populations, including the Hawaiian *ali'i* (chiefly class). This would be attributable, for the most part, to the plentiful marine and estuarine resources available at the coast, along which several sites interpreted as permanent habitations and fishing shrines have been located. Other attractive subsistence-related features of the *ahupua'a* include irrigated lowlands suitable for wetland taro cultivation, as well as the lower forest area of the mountain slopes for the procurement of forest resources. Handy and Handy (1972:429) report:

The lowlands, bisected by ample streams, were ideal terrain for the cultivation of irrigated taro. The hinterland consisted of deep valleys running far back into the Ko'olau range. Between the valleys were ridges, with steep sides, but a very gradual increase of altitude. The lower part of the valley sides were excellent for the cultivation of yams and bananas. Farther inland grew the 'awa for which the area was famous.

In addition, breadfruit, coconuts, *wauke* (paper mulberry, *Broussonetia papyrifera*, used to make *kapa* for clothing), bananas, *olonā* (*Touchardia latifoli*, used to make cordage), and other plants were grown in the interior. 'Ewa was known as one of the best areas to grow gourds and was famous for its *māmaki* (*Pipterus* spp.; used to make *kapa* for clothing). It was also famous for a rare taro called the *kāi o 'Ewa*, which was grown in mounds in marshy locations (Handy and Handy 1972:471). The cultivation of this prized and delicious taro led to the saying:

Ua 'ai i ke kāi-koi o 'Ewa.

He has eaten the Kāi-koi taro of 'Ewa.

Kāi is O'ahu's best eating taro; one who has eaten it will always like it. Said of a youth of a maiden of 'Ewa, who, like the Kāi taro, is not easily forgotten. [Pukui 1983:305]

The lochs of Pearl Harbor were ideal for the construction of fishponds and fish traps. Forest resources along the slopes of the Wai'anae Range probably acted as a viable subsistence alternative during times of famine and/or low rainfall (Handy 1940:211; Handy and Handy 1972:469-470). The upper valley slopes may have also been a resource for sporadic quarrying of basalt used in the manufacturing of stone tools (Hammatt et al. 1990).

Captain Vancouver sailed by Kalaeloa (Barbers Point) in 1792, and recorded his impression of the small coastal village of Kualaka'i and the arid Honouliuli coast.

The point is low flat land, with a reef round it...Not far from the S.W. point is a small grove of shabby cocoa-nut trees, and along these shores are a few struggling fishermen's huts. [Vancouver 1798, Vol. I:167].

...from the commencement of the high land to the westward of Opooroah [Pu'uloa], was composed of one very barren rocky waste, nearly destitute of

verdure, cultivation or inhabitants, with little variation all the way to the west point of the island...[Vancouver 1798, Vol. II:217]

...This tract of land was of some extent but did not seem to be populous, nor to possess any great degree of fertility; although we were told that at a little distance from the sea, the soil is rich, and all necessities of life are abundantly produced...[Vancouver 1798, Vol. III:361-363]

Subsequent to western contact in the area, the landscape of the 'Ewa plains and Wai'anae slopes was adversely affected by the removal of the sandalwood forest, and the introduction of domesticated animals and new vegetation species. Domesticated animals, including goats, sheep and cattle, were brought to the Hawaiian Islands by Vancouver in the early 1790s, and were allowed to graze freely about the land for some time after. It is unclear when the domesticated animals were brought to O'ahu. However, L.A. Henke reports the existence of a longhorn cattle ranch in Wai'anae by at least 1840 (Frierson 1972:10). During this same time, perhaps as early as 1790, exotic vegetation species were introduced to the area. These typically included vegetation best suited to a terrain disturbed by the logging of sandalwood forest and eroded by animal grazing.

At contact, the most populous *ahupua'a* on the island was Honouliuli, with the majority of the population centered on Pearl Harbor. In 1832, a missionary census of Honouliuli recorded the population as 1,026. Within four years, the population was down to 870 (Schmitt 1973:19, 22). In 1835, there were eight to ten deaths for every birth (Kelly 1991:157-158). Between 1848 and 1853, there was a series of epidemics of measles, influenza, and whooping cough that often wiped out whole villages. In 1853, the population of 'Ewa and Wai'anae combined was 2,451 people. In 1872, it was 1,671 (Schmitt 1968:71). The inland area of 'Ewa was probably abandoned by the mid-19th century, due to population decline and consolidation of the remaining people in the town of Honouliuli, near Kapapāhū Point.

3.2.2.2 Mid-19th Century and the Māhele

The Organic Acts of 1845 and 1846 initiated the process of the Māhele, the division of Hawaiian lands, which introduced private property into Hawaiian society. In 1848, the crown, the Hawaiian government, and the *ali'i* (royalty) received their land titles. The common people (*maka'āinana*) received their *kuleana* awards (individual land parcels) in 1850. It is through records for Land Commission Awards (LCA) generated during the Māhele that the first specific documentation of life in 'Ewa, as it had evolved up to the mid-19th century, come to light.

In 1855 the Land Commission awarded all of the unclaimed lands in Honouliuli, 43,250 acres, to Miriam Ke'ahikuni Kekau'ōnohi (Royal Patent 6971 in 1877; Parcel 1069 in the Land Court office; Land Commission Award 11218), a granddaughter of Kamehameha I, and the heir of Kalanimōkū, who had been given the land by Kamehameha after the conquest of O'ahu (Indices of Awards 1929; Kame'eleihiwa 1992). Kekau'ōnohi was one of Liholiho's (Kamehameha II's) wives, and after his death, she lived with her half-brother, Luanu'u Kahalai'a, governor of Kaua'i (Kelly 1985:21). Subsequently, Kekau'ōnohi ran away with Queen Ka'ahumanu's stepson, Keli'iahonui, and then became the wife of Chief Levi Ha'alelea. Upon her death on June 2, 1851, all her property was passed on to her husband and his heirs. In 1863, the owners of the

kuleana lands deeded their lands back to Ha‘alelea to pay off debts owed to him (Frierson 1972:12). In 1864, Ha‘alelea died, and his second wife, Anadelia Amoe, transferred ownership of the land to her sister’s husband John Coney.

During the *Māhele* of 1848, 96 individual land claims were made in the *ahupua‘a* of Honouliuli, with 72 claims being registered and awarded by King Kamehameha III to commoners (Table 3; Tuggle and Tomonari-Tuggle 1997:34). The 72 *kuleana* awards were almost all made adjacent to Honouliuli Gulch, which contained fishponds and irrigated taro fields.

Table 3. 72 *Kuleana* Land Commission Awards in Honouliuli Ahupua'a

| LCA | Awardee | 'Ili | | LCA | Awardee | 'Ili |
|-----|-------------------|---|--|--------|------------|------------------------|
| 748 | Kalauhala | Panahaha, Kaaumakua | | 906 | Kanoho | Kamoku |
| 749 | Mahina | Kaulaula | | 907 | Luana | Kamaipipipi, Niukee |
| 751 | Kalauli | Kamoku, Polapola, Kalihikahi | | 910 | Nunu | Kaaumakua |
| 752 | Haae | Kailikahi, Kailihai | | 911 | Kauhailepa | Poohilo |
| 753 | Manuwa | Kamoku | | 914 | Kamaala | Niukee, Kapapahi |
| 754 | Kaunahi | Niukee | | 916 | Kama | Loloulu, Makau |
| 755 | Keinohana-nui | Niukee, Kailikahi, Kaakau | | 917 | Kaulu | Kamilomilo, Kaaumakua |
| 756 | Kauouo | Kaaumakua | | 947 | Kaopala | Loloulu, Kaulaula |
| 758 | Nihua | Niukee | | 960 | Poopuu | Loloulu |
| 760 | Kuhemu | Kamaipipipi, Niukee, Naopala, Kailikahi | | 1565 | Kaalauahi | Niukee, Kapapahi |
| 761 | Kinolua | Niukee, Kailikahi, Ilikahi, Palahemo | | 1570 | Kekua | Poohilo |
| 762 | Kalama | Kaaumakua | | 1570-B | Paekane | Kaaumakua |
| 763 | Keliiaa, Solomona | Hiwa, Poohilo, Mauakapua, Uani / Maui, Polapola | | 1570-C | Naholowaa | Kaaumakua |
| 765 | Kamalae | Niukee, Kailikahi, Palahemo | | 1573 | Kawahamana | Niukee, Kapapahuhi |
| 766 | Paele | Niukee, Kaluamooiki, Kailikahi | | 1580 | Kanahuna | Kamilomilo |
| 767 | Hapauea | Niukee, Kapapahi | | 1580-B | Kapioho | Polapola, Kahiwapalaai |
| 768 | Pio | Kahaumakua, Niukee, Waioha | | 1598 | Kekua | Loloulu, Kapapahi |
| 827 | Kauakahilau | Poohilo | | 1605-B | Nakai | Mahuna, Niukee |
| 828 | Kawahaea | Poohilo | | 1666 | Mauwele | Poohilo |
| 831 | Kaekuna | Poohilo | | 1666-B | Kuahilo | Poohilo |
| 832 | Opiopio | Poohilo | | 1670 | Moano | Loloulu, Kaaumakua |
| 834 | Oni | Poohilo, Kailikahi | | 1672 | Makue | Kamoku, Kapapahuhi |

| LCA | Awardee | <i>ʻIli</i> | | LCA | Awardee | <i>ʻIli</i> |
|-----|---------------|---------------------------------------|--|--------|------------|----------------------------------|
| 839 | Kaaiawaawa | Kamilomilo, Kailikahi, Haole, Poohilo | | 1699 | Leleiaupa | Maui, Poaiwaikale |
| 845 | Kekukahiko | Kapapahi, Niukee | | 1701 | Alaluka | Pohilo |
| 847 | Hinaa | Poohilo | | 1703 | Aimaikai | Kamilomilo |
| 848 | Kapule | Poohilo | | 1713 | Healani | Niukee, Kapapuhi |
| 869 | Pue | Maui | | 1719 | Hilea | Kaaumakua |
| 872 | Kahakuliili | Loloulu, Paakai, Papaiousa | | 1720 | Hilinae | Polapola |
| 874 | Laamaikahiki | Polapola, Hiwa | | 5204 | Kalama 2 | Polapola |
| 876 | Nohunohu | Niukee, Nukee | | 5653 | Kua | Maui, Polapola, Kahui |
| 881 | Kikala | Polapola | | 5654 | Kuhiena | Maui, Poohilo |
| 886 | Kahalewai | Kamoku, Manuwa | | 5653-B | Kanehikili | Poohilo |
| 892 | Aoao, Samuela | Kapapahi, Niukee | | 5670-B | Kaohai | Kaihuopalaai, Polapola |
| 898 | Kaneaola | Polapola | | 5670-C | Kumupopo | Poohili, Kepoe, Loloulu, Puaaluu |
| 901 | Kuahine | Nukee / Niukee, | | 5950 | Pihana | Kamoku |
| 902 | Haakue | Waimanalo | | 10933 | Uia | Niukee |
| 905 | Kaimuena | Kaaumakua | | | | |

An 1873 map of Honouliuli (Figure 13) shows the project area north of the dense cluster of LCA parcels in lower Honouliuli Gulch, known as the “Honouliuli Taro Lands.” An 1878 map of the Honouliuli Taro Lands (Figure 14) shows the *mauka* (inland) extent of the cluster of LCA parcels approximately 200 m *makai* (seaward) of the current project area. The five LCAs located nearest to the project area included multiple *lo‘i* (taro fields), *kula* (pasture or dry field), house lots (Table 4).

Table 4. Honouliuli Land Commission Awards in the Vicinity of the Project Area

| LCA | Contents of Award |
|-----------------|--|
| 831:3 | No data |
| 847:1 and 847:2 | 14 <i>lo‘i</i> , 1 <i>kula</i> , and 1 guard house for the <i>lo‘i</i> |
| 848:5 | 5 <i>lo‘i</i> and 1 <i>kula</i> |
| 911:1 | 1 house, 1 <i>kula</i> , 5 <i>lo‘i</i> |
| 1570:1 | Several <i>lo‘i</i> and 1 <i>kula</i> |

3.2.2.3 Late 19th Century to Present

Early Ranching in on the ‘Ewa Plain

In 1871, John Coney rented the lands of Honouliuli to James Dowsett and John Meek, who used the land for cattle grazing. In 1877, James Campbell purchased most of Honouliuli Ahupua‘a for a total of \$95,000. He then drove off 32,347 head of cattle belonging to Dowsett, Meek, and James Robinson, and constructed a fence around the outer boundary of his property (Bordner and Silva 1983:C-12). He let the land rest for one year and then began to restock the ranch, so that he had 5,500 head after a few years (Dillingham 1885, cited in Frierson 1972:14).

In 1881, a medical student touring the island to provide smallpox vaccinations to the population, viewed Campbell’s property, called Honouliuli Ranch:

I took a ride over the Honouliuli Ranch which is quite romantic. The soil is a deep, reddish loam, up to the highest peaks, and the country is well-grassed. Springs of water abound. The *‘ilima*, which grows in endless quantities on the plains of this ranch, is considered excellent for feeding cattle; beside it grows the indigo plant, whose young shoots are also good fodder, of which the cattle are fond. Beneath these grows the manieizie grass, and Spanish clover and native grasses grow in the open; so there is abundant pasturage of various kinds here. As I rode, to the left were towering mountains and gaping gorges; ahead, undulating plains, and to the right, creeks and indentations from the sea. A wide valley of fertile land extends between the Nuuanu Range and the Waianae Mountains and

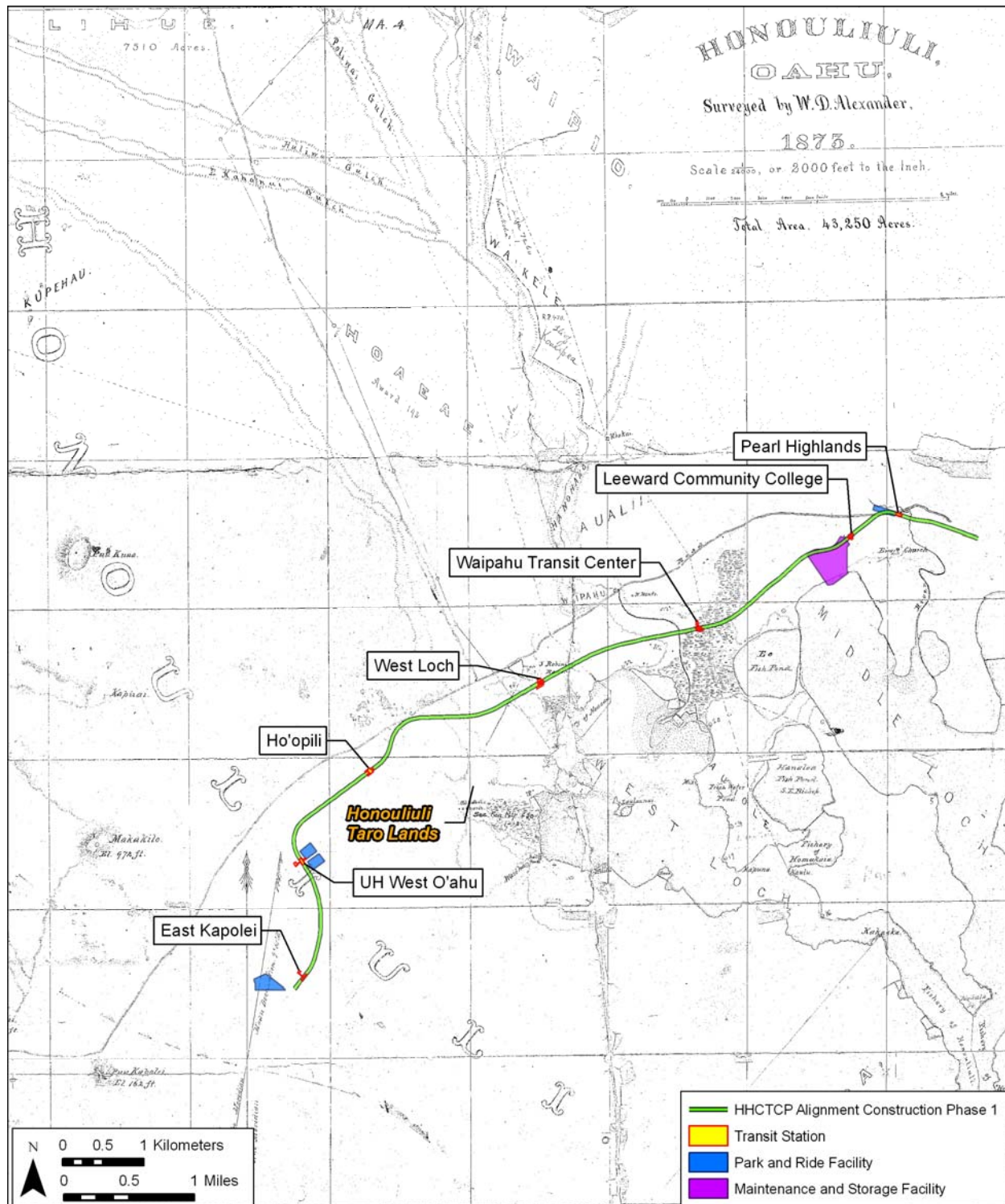


Figure 13. 1873 Map of Honouliuli (Registered Map No. 405, Hawai'i Land Survey Division), W.D. Alexander Surveyor, showing the location of the project area in relation to the "Honouliuli Taro Lands"

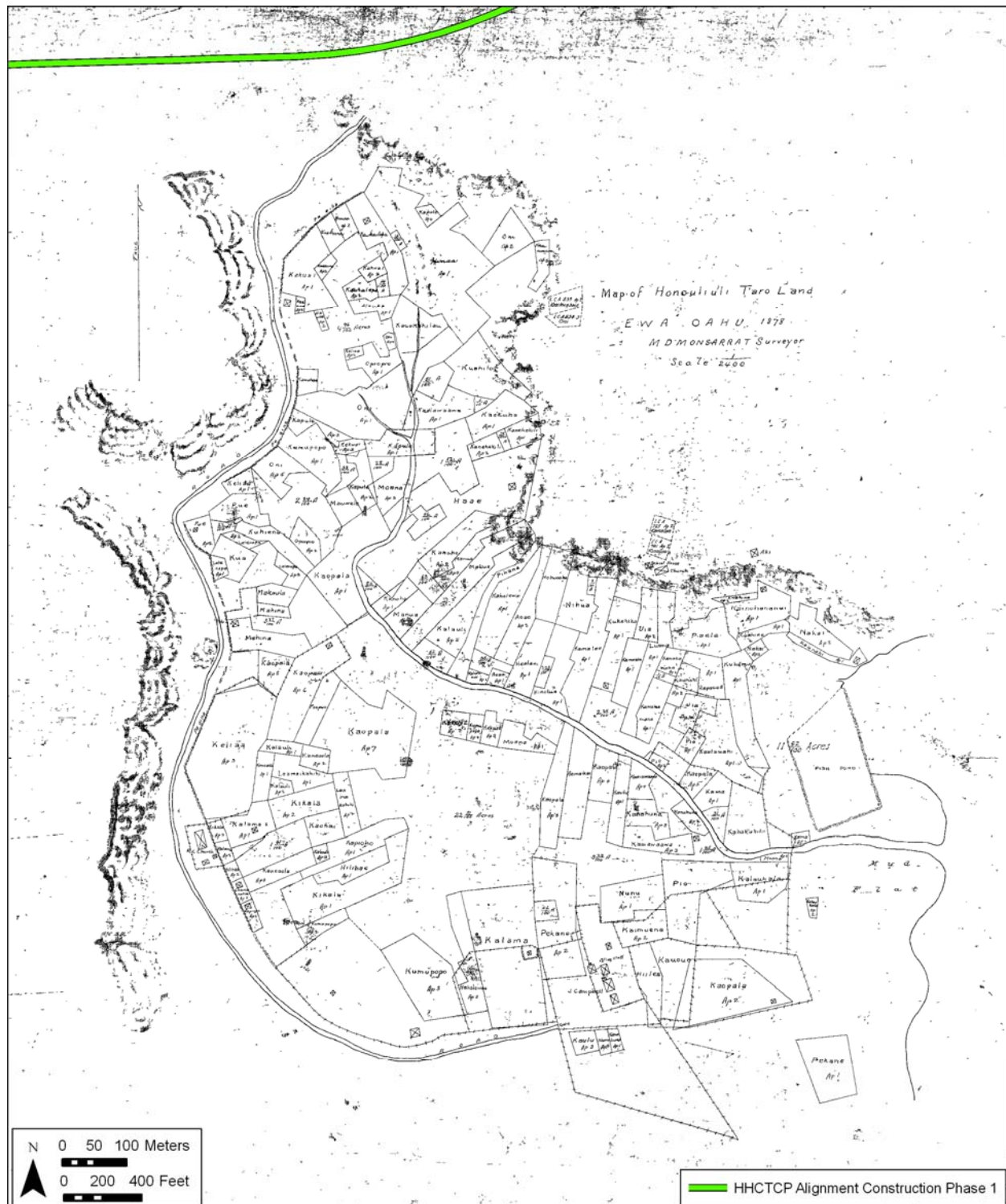


Figure 14. 1878 Map of Honouliuli Taro Lands (Registered Map No. 630, Hawai'i Land Survey Division), M.D. Monsarrat Surveyor, showing the location of the project area

thence to the coast of Waialua. There are many wild goats in this valley, which are left more or less undisturbed because they kill the growth of mimosa bushes, which would otherwise overrun the country and destroy the pasturage for cattle. [Briggs 1926:62-63]

In 1880-81, Honouliuli Ranch was described as:

...Acreage, 43,250, all in pasture, but possessing fertile soils suitable for agriculture; affords grazing for such valuable stock. The length of this estate is no less than 18 miles. It extends to within less than a mile of the sea coast, to the westward of the Pearl River inlet...There are valuable fisheries attached to this estate...[Bowser 1880:489]

From Mr. Campbell's veranda, looking eastward, you have one of the most splendid sights imaginable. Below the house there are two lochs, or lagoons, covered with water fowl, and celebrated for their plentiful supply of fish, chiefly mullet...Besides Mr. Campbell's residence, which is pleasantly situated and surrounded with ornamental and shade trees, there are at Honouliuli two churches and a school house, with a little village of native huts. [Bowser 1880:495]

Most of Campbell's lands in Honouliuli were used exclusively for cattle ranching. At that time, one planter remarked "the country was so dry and full of bottomless cracks and fissures that water would all be lost and irrigation impracticable" (Ewa Plantation Co. 1923:6-7). In 1879, Campbell brought in a well-driller from California to search the 'Ewa plains for water. A well, drilled to a depth of 240 feet near Campbell's home in 'Ewa, resulted in "a sheet of pure water flowing like a dome of glass from all sides of the well casing" (The Legacy of James Campbell n.d., cited in Pagliaro 1987:3). Following this discovery, plantation developers and ranchers drilled numerous wells in search of the valuable resource.

Other Enterprises in Campbell Lands

Parts of Campbell's lands were also used to grow rice. By 1885, 200 acres in Honouliuli were used for rice and 50 acres were used to grow bananas (article in *Pacific Commercial Advertiser*, August 15, 1885, summarized in Silva 1987:A-12). The rice fields were planted in former taro fields or in undeveloped swamps, such as those near the former Honouliuli Taro Lands. The rice fields in 1882 were described by Frank Damon during a tour of the area:

...Towards evening we reached Honouliuli, where the whole valley is leased to rice planters...This was one of the largest rice plantations we visited. Sometimes two or three men only, have a few fields which they cultivate for themselves, and we often too came upon houses where there were eight or ten men working their own land. But the larger plantations are owned by merchants in Honolulu, who have a manager acting for them...[Damon 1882:37]

In 1890, Dillingham leased all Honouliuli lands below 200 feet to William Castle, who used most of the land for sugar cane cultivation, but also sub-leased some lands for rice cultivation, pasture, wood lots, bee-keeping, garden crops, and quarries. Some land above 650 feet was also leased for the cultivation of canaigre, which may be a word used for pineapple (Frierson 1972:15-16).

An additional agricultural trial was conducted in the Honouliuli area for the cultivation of sisal, a plant used to make fibers for rope and other material. Some sisal was planted before 1898 and production continued until the 1920s (Frierson 1972:16). This was grown mainly on the coastal plain of Honouliuli in Kānehili, just *mauka* of Kualaka'i Beach (now Nimitz Beach). An article in the *Paradise of the Pacific* in 1902 described this venture in glowing terms:

...The venture was made and a tract of land containing a large percentage of disintegrated coral, in the neighborhood of Ewa Plantation, where nothing else would grow, was chosen for the planting...The Hawaiian Fiber Co., which Mr. Turner organized, and of which he is now manager, has 755 acres under fence, two and a half miles of which is stone wall with good gates at convenient places...In a large field containing 130 acres, mauka of the Oahu Railway & Land Co. track, the first harvest is to be gathered in a few months...Out of this section of 130 acres the company has figured on securing 50 tons of clean fiber, for which it is offered eight cents per pound in Honolulu or nine cents per pound in San Francisco...[*Paradise of the Pacific* March 1902:17]

Into the early 20th century, some Hawaiian families continued to live in Honouliuli, including the fishing village of Kualaka'i, and preserve the traditional lifestyle. One resident, Mrs. Eli Williamson, recalled:

In the Honouliuli area the train stopped among the *kiawe* (algaraboa) trees and *malina* (sisal) thickets. We disembarked with the assorted food bundles and water containers. Some of the Kualaka'i 'ohana (family) met us to help carry the 'ukana (bundles) along a sandstone pathway through the *kiawe* and *malina*. The distance to the frame house near the shore seemed long. When we departed our 'ukana contained fresh lobsters, *limu* (algae), fish and *i'a malo'o* (dried fish)...[Williamson, in Kelly 1985:160]

History of the Oahu Railway and Land Company (O.R. & L.)

In 1886, James Campbell and B.F. Dillingham put together the "Great Land Colonization Scheme," which was an attempt to sell Honouliuli land to homesteaders (Thrum 1887:74). This homestead idea failed. Two factors influencing the failure were the lack of water and the distance from 'Ewa to Honolulu. The water problem was solved by the drilling of artesian wells, and Dillingham decided that the area could be used instead for large-scale agricultural cultivation (Pagliaro 1987:4). The transportation problem was to be solved by the construction of a railroad, which Dillingham soon began to finance under the company name of the Oahu Railway and Land Company (O.R. & L.).

During the last decade of the 19th century, the railroad would reach from Honolulu to Pearl City in 1890, to Wai'anae in 1895, to Waialua Plantation in 1898, and to Kahuku in 1899 (Kuykendall 1967:III, 100). This railroad line eventually ran across the center of the 'Ewa Plain, generally running along the *makai* (seaward) boundary of the sugar cane fields. To attract business to the new railroad, Dillingham sub-leased all Honouliuli lands below 200 feet to William Castle, who in turn sublet the area to the newly-formed Ewa Plantation Company (Frierson 1972:15). Dillingham's Honouliuli lands above 200 feet that were suitable for sugar cane cultivation were sublet to the Oahu Sugar Company. Throughout this time, and continuing

into modern times, cattle ranching continued in the area, and Honouliuli Ranch was the “fattening” area for the other ranches (Frierson 1972:15).

Operations at the O.R. & L. began to slow down in the 1920s, when electric streetcars were built for public transportation within the city of Honolulu and automobiles began to be used by families for transportation outside the city (Chiddix and Simpson (2004:185). The build-up to World War II turned this decline around, as the U.S. military utilized the O.R. & L. lines to transport materials to build defense projects around the island. Historians have noted that one of the most serious mistakes made by the Japanese in their 1941 attack on Pearl Harbor was their decision not to bomb the railway infrastructure. Soon after the attack, the O.R. & L. operated 24 hours a day, transporting war materials and troops from Honolulu to the new and expanded army, naval, and air bases. The huge naval base at Pearl Harbor had its own rail lines that connected to the O.R. & L. rail lines.

In August of 1945, the war ended, and so did the O.R. & L.'s heyday as a military transport line:

She had served her country well and proudly during the war, but operating round-the-clock on what little maintenance could be squeezed in, had taken a prodigious hit on the locomotives and track. Traffic stayed steady for a short time, but soon dropped precipitously as soldiers and sailors went home, military posts were shrunk or razed, and civilians could again get tires, gasoline and new cars. [Chiddix and Simpson 2004:257]

There was no choice but to abandon the O.R. & L. main line, and in 1946 Walter F. Dillingham, son of B.F. Dillingham, wrote:

The sudden termination of the war with Japan changed not only the character of our transportation, but cut the freight tonnage to a third and the passenger business to a little above the pre-war level. With the increased cost of labor and material and the shrinkage in freight tonnage and passenger travel, it was definite that the road could not be operated as a common carrier. With no prospect of increased tonnage, and the impossibility of increasing rates against truck competition, your management has applied to the Interstate Commerce for authority to abandon its mainline. [Walter Dillingham, cited in Chiddix and Simpson 2004:257]

After the war, most of the over 150 miles of O.R. & L. track was pried up, locomotives were sold to businesses on the U.S. mainland, and railway cars were scrapped. In 1947, the U.S. Navy took over a section of the O.R. & L. track for their own use: to transport bombs, ammunition, and torpedoes from the ammunition magazines at Lualualei, West Loch, and Waikale, on O.R. & L.'s Wahiawā Branch line to Pearl Harbor Naval Base (Treiber 2005:25-26). The track to Waipahu was abandoned in the 1950s, but the line from the magazines in Lualualei to the wharves in West Loch at Pearl Harbor remained open until 1968.

History of the Ewa Plantation Company

The Ewa Plantation Company was incorporated in 1890 for sugar cane cultivation. The first crop, 2,849 tons of sugar, was harvested in 1892. Ewa Plantation Company was the first all-artesian plantation, and it gave an impressive demonstration of the part artesian wells were to

play in the later history of the Hawaiian sugar industry (Kuykendall 1967:III, 69). As a means to generate soil deposition on the coral plain and increase arable land in the lowlands, the Ewa Plantation Company installed ditches running from the lower slopes of the mountain range to the lowlands. When the rainy season began, they plowed ground perpendicular to the slope so that soil would be carried down the drainage ditches on to the lower coral plain. After a few years, about 373 acres of coral wasteland were reclaimed in this manner (Immisch 1964). By the 1920s, Ewa Plantation Company was generating large profits and was the “richest sugar plantation in the world” (*Paradise of the Pacific*, December 1902:19-22, cited in Kelly 1985:171).

During the 20th century, the Ewa Plantation Company would continue to grow and, by the 1930s, would encompass much of the eastern half of Honouliuli Ahupua‘a. This growth impelled the creation of plantation villages to house the growing immigrant labor force working the fields. After the outbreak of World War II, which siphoned off much of the plantation’s manpower, along with the changeover to almost complete reliance on mechanical harvesting in 1938, there was little need for the large multi-racial (Japanese, Chinese, Okinawan, Korean, Portuguese, Spanish, Hawaiian, and Filipino) labor force that had characterized most of the early history of the plantation. The Oahu Sugar Company took control of the Ewa Plantation Company lands in 1970 and continued operations until 1995, when they decided to shut down sugar cane production in the combined plantation areas (Dorrance and Morgan 2000:45, 50).

The Military Development at Pearl Harbor

In 1891, Russian explorer Otto Von Kotzebue tried to observe Pearl River, but his group could not obtain a canoe. What he was told led him to speculate on the possible importance of Pearl Harbor to the future:

In the mouth of this river are several islands; it is so deep, that the greatest ship of the line can lie at anchor a few fathoms from the shore; and so broad, that a hundred vessels can conveniently find room in it. The entrance into the Pearl Rivers is in the same situation as the harbor of Hana-rura; but the windings between the reefs are, however, said to render a passage more difficult. If this place were in the hands of the Europeans, they would certainly employ means to make this harbour the finest in the world. [Kotzebue 1821:338-348]

The early missionary Levi Chamberlain was able to take an outrigger canoe trip to Pearl River:

Kawaa took passage in our canoe to go down the harbor to a place where oysters are abundant to give orders to his people to gather a mess. The sail down the harbor was delightful...The passage down the creek for a number of miles was very pleasant till we got down near the reef and our course altered. We then could sail no longer as the wind was against us. The sail was lowered the mast taken down and secured across the outrigger and the rowers plied their paddles. [Journal of Levi Chamberlain 1822-1849, Hawaiian Mission Schools, Storage Case 4, p. 899, from Sterling and Summers 1978:51]

The first foreign attempt to survey Pearl Harbor was made in 1840 during the U.S. Exploring Expedition, led by Charles Wilkes.

In this district is a large inlet of the sea, into which the river Ewa empties; at the entrance of this inlet is the village of Laeloa (at Kalaeloa Pont): the shore is known by the name of Pearl River or harbour, from the circumstance that the pearl oyster is found here; and it is the only place in these islands where it occurs.

The inlet has somewhat the appearance of a lagoon that has been partly filled up by alluvial deposits. At the request of the king, we made a survey of it: the depth of water at its mouth was found to be only fifteen feet; but after passing this coral bar, which is four hundred feet wide, the depth of water becomes ample for large ships, and the basin is sufficiently extensive to accommodate any number of vessels. If the water upon the bar should be deepened, which I doubt not can be effected, it would afford the best and most capacious harbour in the Pacific...[Wilkes 1970:79]

Although Wilkes was impressed by the harbor, he was not at this time thinking of how this survey could benefit the American government in the future. In fact, Wilkes (1970:79) concluded, "As yet there is no necessity for such an operation, for the port of Honolulu is sufficient for all the present wants of the islands, and the trade that frequents them."

This had changed in less than 30 years, however. The U.S. military had tried to make a coaling station on Midway Island in 1869 by blasting through the coral reef to make a harbor, but the plan failed. In 1873, General Schofield presented a confidential report to the U.S. Secretary of War, recommending that Pearl Harbor should be available to the U.S. Navy. Schofield wrote:

In case it should become the policy of the Government of the United States to obtain the possession of this harbor for naval purposes, jurisdiction over all the waters of Pearl River with the adjacent shores to the distance of 4 miles from any anchorage should be ceded to the United States by the Hawaiian Government...

The cession of Pearl River could probably be obtained by the United States in consideration of the repeal of the duty of Sandwich Island sugar. Indeed, the sugar-planters are so anxious for a reciprocity treaty, or so anxious rather for free trade in sugar with the United States, that many of them openly proclaim themselves in favor of annexation of these islands of the United States. [Sen. Ex. Docs, 52nd Cong. 2nd Sess. No. 77, pp. 150-154, reproduced in Judd 1971:Appendix 3]

This reciprocity treaty was concluded in 1876, with the provision that Hawai'i would not "lease or relinquish sovereignty to another country or any harbor, etc." In 1887, the treaty was renewed and amended and allowed the United States the "exclusive right to enter the harbor of Pearl River, in the Island of Oahu, at to establish and to maintain there a coaling and repair station for the use of vessels of the United States" (Judd 1971:128).

After annexation of the Hawaiian Islands to the United States in 1899, development began to create a Pacific base that could be used as a staging area for the Spanish-American war (Coletta 1985:433). Dredging of the harbor began in 1901, and additional dredging to deepen and widen the channel was conducted in 1908 and again in the 1920s. Money for the funding of the construction of dry docks and other support facilities was approved in 1908. In 1931, the U.S. Navy built an ammunition depot at West Loch on a 213-acre parcel that it had bought from the

Campbell Estate. Construction of a new depot in Lualualei Valley and at West Loch Harbor began in 1931.

In the early 1930s, the U.S. Navy leased 700 acres of the Campbell Estate to build Ewa Field, a base with a mooring mast for Navy airships. Although the mast was completed, the program was abandoned before the *Akron*, the designated airship for the mast, was built. In 1937, 18 miles of roads were built in the coastal Honouliuli area, and in 1939-1940 the U.S. government bought 3,500 acres of land in this area, to build several other military camps and installations, including Barbers Point Naval Air Station (Landrum et al 1997:62-67).

On December 7, 1941, the Japanese Navy launched a devastating surprise attack on the U.S. Naval base at Pearl Harbor and other military facilities. Although the major battle damage to the U.S. Pacific Fleet was at its base at Ford Island in the Middle Loch of Pearl Harbor, Honouliuli did not escape unscathed.

The Waipahu and Ewa sugar plantation, next to Pearl Harbor and the town of Wahiawa, adjoining Schofield Barracks, saw more action than did Honolulu.

At Waipahu, machine gun bullets, shrapnel, and shells started two cane fires, riddled the sugar mill, hit the plantation hospital in four places, went through the roof of the company store, exploding in an electric supply warehouse, and narrowly missed many houses. In nearly all of the fields of tall cane, many of which contained terrified women and children, shells buried themselves—dozens of them in some concentrated areas—blasting holes in the ground the size of barrels, and flattening cane for several square yards.

At Ewa, after bombing the nearby Marine airfield [at Barbers Point], enemy planes machine-gunned the plantation's main street, the mill and power plant and some 30 houses and started two cane fires. [Allen 1999:20]

The attack had consequences not only for the military, but also for the civilians, mostly Japanese, who lived around West Loch.

Two permanent local evacuations were ordered in the first month of the war, partly to remove civilians from areas which might be dangerous in event of further attack and partly to protect installations from possible sabotage or espionage activities. On a Thursday less than two weeks after the bombing, farmers adjacent to West Loch at Pearl Harbor were ordered to leave their farms by sundown. The order was modified to allow two days to prepare and the men were permitted to return to their farms during daylight until livestock could be moved and crops harvested. The displaced farmers, who had only recently been established at West Loch by the Farm Security Administration, were forced to seek temporary housing with friends and relatives or at Ewa plantation. Since they had invested in the enterprises practically all of their life's savings and considerable money borrowed from the FSA as well, several suffered heavy losses. [Allen 1999:122]

West Loch was later used as the major staging area for U.S. Navy vessels for the Pacific Fleet, especially for ships called Tank Landing Ships (LST), those capable of landing on shore to disembark vehicles and marines. On Sunday morning, May 21, 1944, 29 LSTs, slated to sail to

the Mariana Islands for the invasion of Saipan, were in West Loch. Each LST carried a crew of 119 men, 200 marines with ammunition, and vehicles with gas. An explosion at 3:08 blasted one LST, quickly leading to fires on the other ships. In addition, 20 buildings on shore at the West Loch facility were damaged. In all, six of the LSTs sank, 163 men died, and 396 people, including civilians, were injured (Leniham 1989: Chap. II). Today, Naval Magazine (NAVMAG) -West Loch is used for the storage of ammunition, and the five wharfs at West Loch provide marine terminal services for ocean-transported ordnance (Landrum et al. 1997:68).

3.2.2.4 Residential and Commercial Development in Honouliuli

A series of historic topographic maps shows the gradual residential and commercial development of Honouliuli. On the 1919 War Department map (Figure 15), residential areas were limited to a cluster at Honouliuli near the old taro lands adjacent to West Loch, and the Ewa Plantation Village *makai* of Honouliuli. On the 1927 U.S.G.S. map (Figure 16), both Honouliuli and the 'Ewa Plantation Villages were expanding with new and improved roads. On the 1943 War Department map (Figure 17), 'Ewa Villages had expanded with additional "ethnic camps," while Honouliuli had become a smaller residential area, rather than a separate "village." On the 1953 Army Mapping Service map (Figure 18), residential subdivisions were spreading to the shore of Pearl Harbor. However, the Honouliuli lands of the Construction Phase I project area, remained almost exclusively under commercial sugar cane cultivation until the end of the 20th century (Figure 19).

3.2.3 Hō'ae'ae, Waikele, Waipi'o, and Waiawa Ahupua'a

3.2.3.1 Pre-Contact and Early Post-Contact Agriculture and Habitation

In a study of the resources and population of the *ahupua'a* in 'Ewa, Ross Cordy (1996:12) wrote a correlation study of three factors: floodplain size, fishery size, and population size. Hō'ae'ae had a small floodplain area, directly adjacent to the north shore of Pearl Harbor's West Loch, and a fairly small fishery, which took up only a small portion of West Loch. Waiawa had a medium-sized floodplain, shared with the neighboring *ahupua'a* of Mānana, and a small fishery, again shared with Mānana, on the north shore of Middle Loch. Waikele had a large floodplain and had irrigated fields along the lower Waikele Stream and the inland Waikakalaua Stream, but only a medium-sized fishery along the west shore of West Loch. Waipi'o had a large floodplain, irrigated fields along Kīpapa Stream, and a large fishery, encompassing most of Middle Loch and the fringes of West Loch along Waipi'o Peninsula. Cordy found that the first two factors were good predictors for pre-contact and early post-contact population. Waipi'o had the largest population, Waikele and Waiawa had medium-sized populations, and Hō'ae'ae had the smallest population of the four.

Of the four *ahupua'a* in central 'Ewa, Waipi'o was the main focus of Hawaiian settlement and activity during the centuries preceding western contact. "The populous dwelling place of the *ali'i* (chiefly class) was formerly located on an east point of Waipi'o Peninsula known as Lēpau" (McAllister 1933:106). The *ali'i* at Waipi'o were no doubt attracted to the great abundance of resources the region offered.



Figure 15. 1919 War Department Fire Control Map, Nanakuli and Pearl Harbor Quadrangles, showing the location of the Honouliuli portion of the Construction Phase I project area

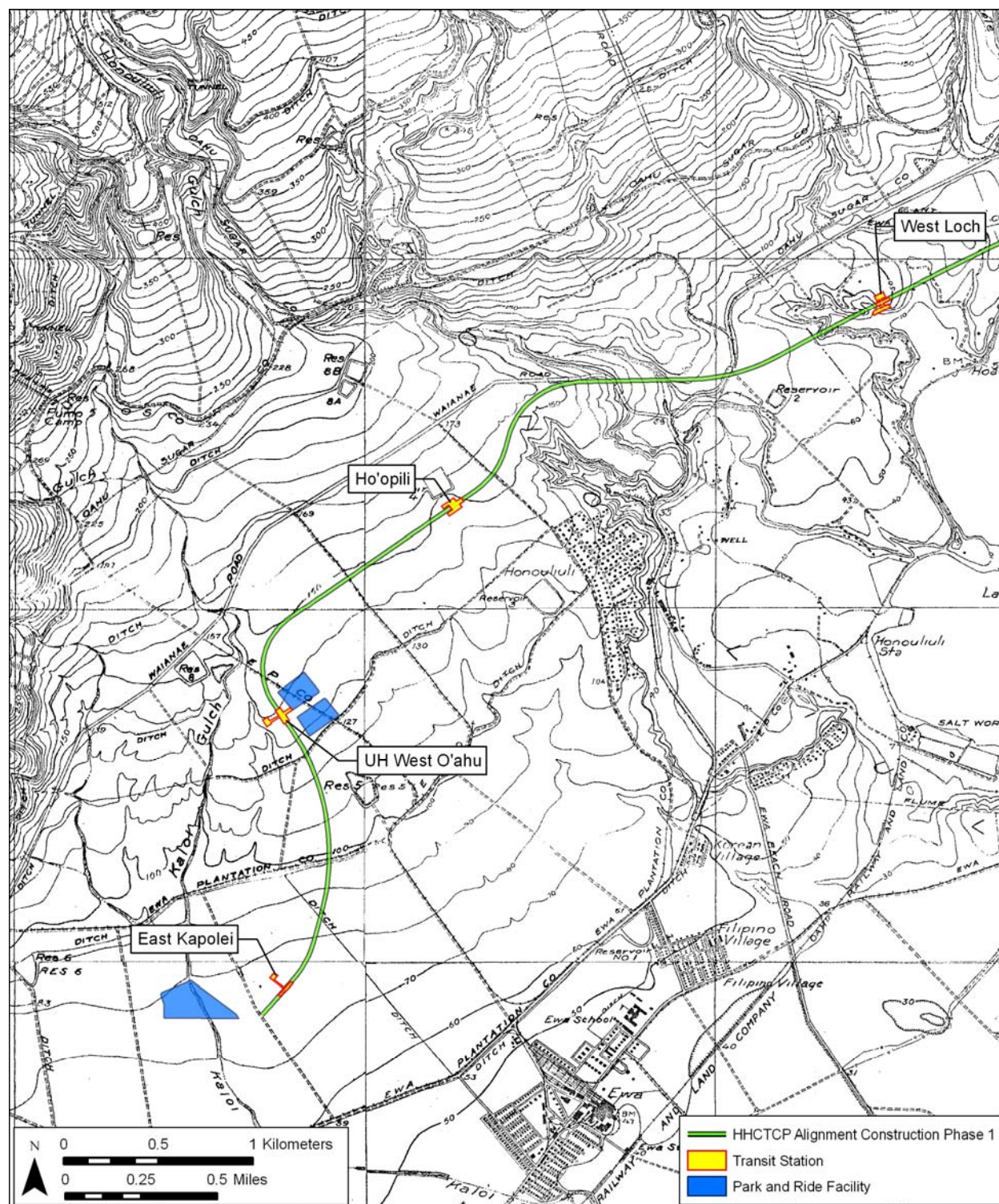


Figure 16. 1927-1928 U.S. Geological Survey Topographic Map, Barbers Point, Waipahu, and Waianae Quadrangles, showing the location of the Honouliuli portion of the Construction Phase I project area

Archaeological Inventory Survey, HHCTCP Construction Phase I, Honouliuli, Hō'ae'ae, Waikele, Waipi'o, and Waiawa Ahupua'a, 'Ewa District, Island of O'ahu

TMK: [1] 9-1, 9-4, 9-6, 9-7 (various plats and parcels)

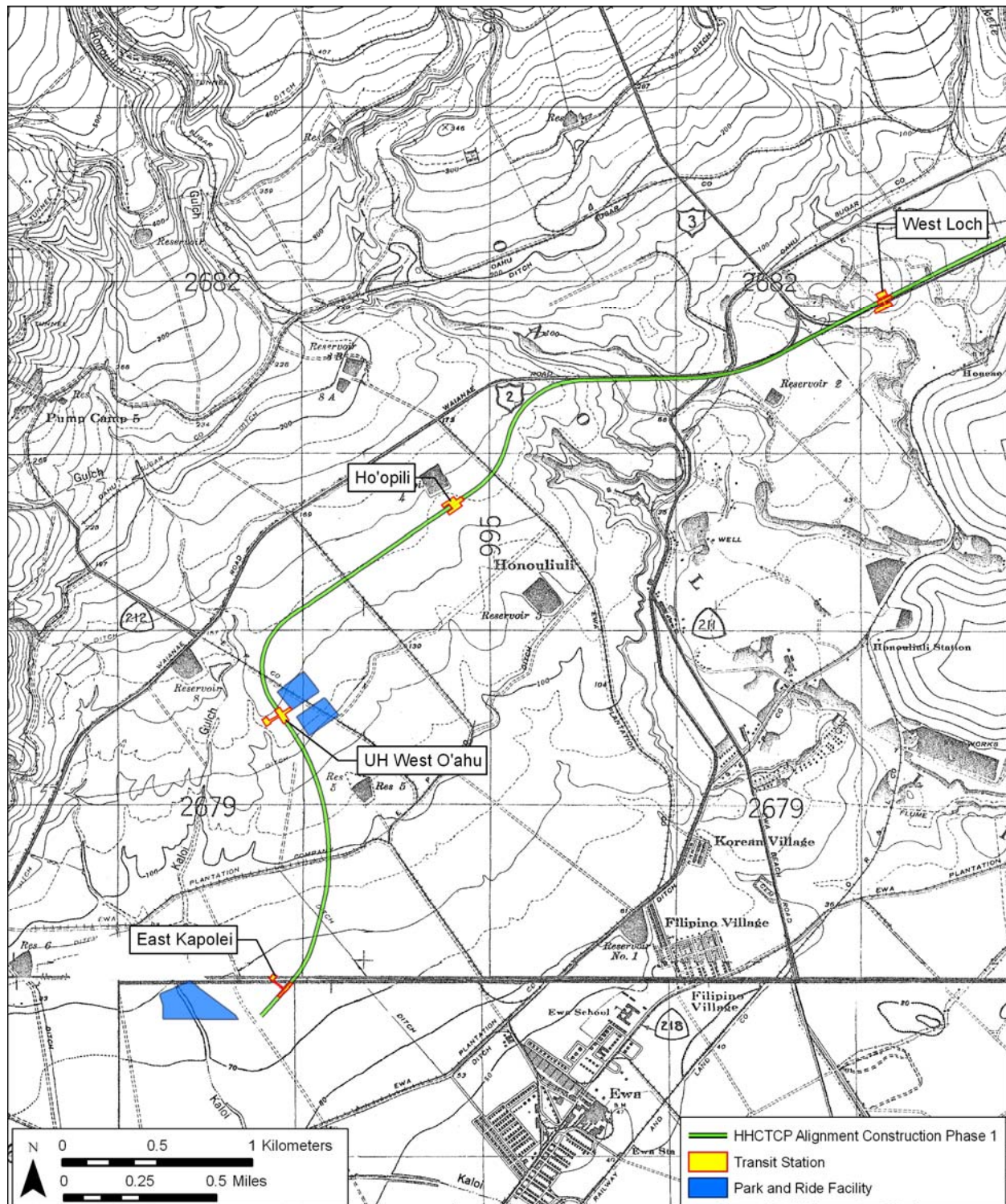


Figure 17. 1943 War Department Topographic Map, Ewa and Waipahu Quadrangles, showing the location of the Honouliuli portion of the Construction Phase I project area

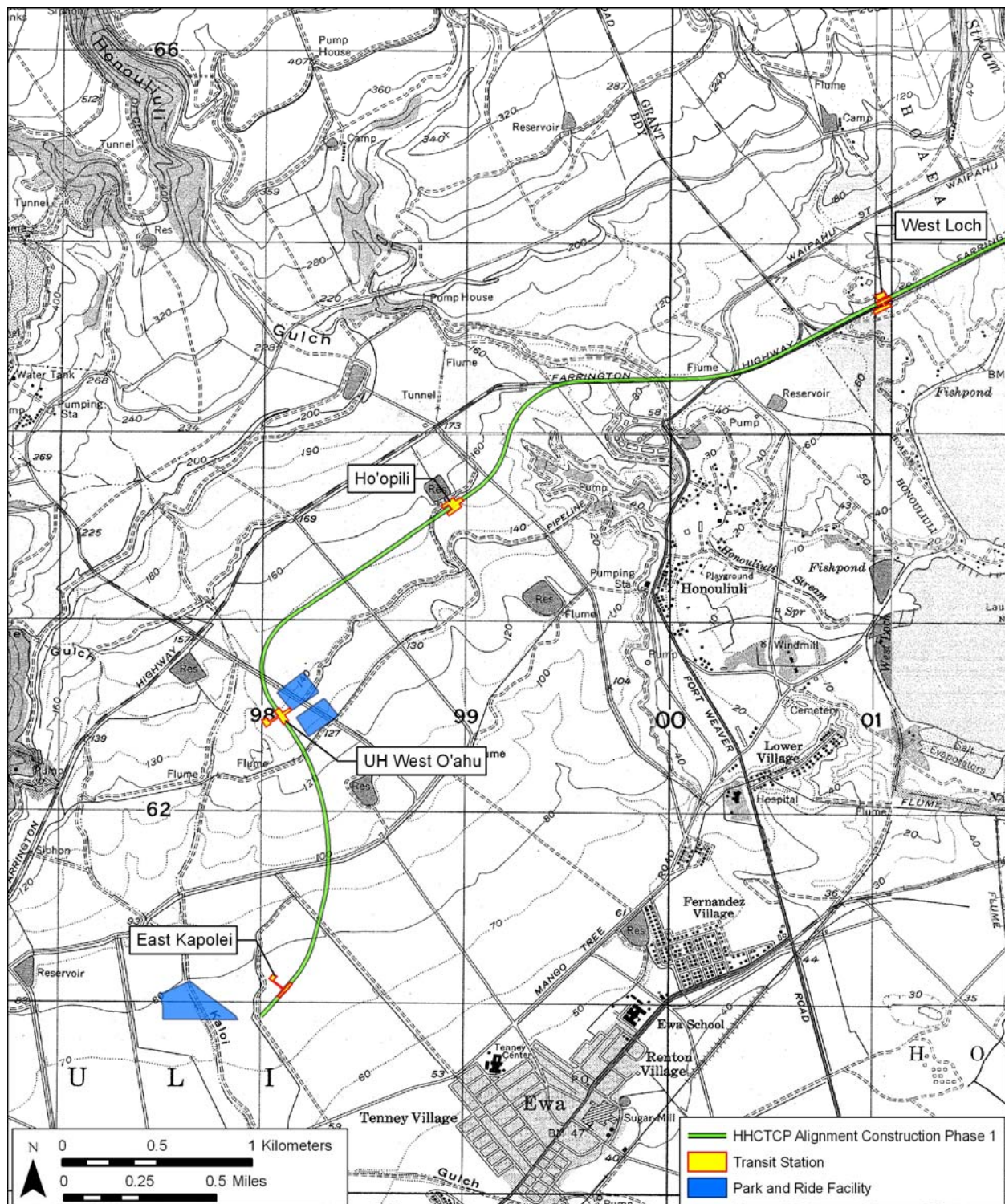


Figure 18. 1953 Army Mapping Service Topographic Map, Ewa and Schofield Barracks Quadrangles, showing the location of the Honouliuli portion of the Construction Phase I project area

Archaeological Inventory Survey, HHCTCP Construction Phase I, Honouliuli, Hō'ae'ae, Waikele, Waipi'o, and Waiawa Ahupua'a, Ewa District, Island of O'ahu

TMK: [1] 9-1, 9-4, 9-6, 9-7 (various plats and parcels)



Figure 19. 1977 U.S. Geological Survey Orthophotograph, Ewa and Schofield Barracks Quadrangles, showing the location of the Honouliuli portion of the Construction Phase I project area

Archaeological Inventory Survey, HHCTCP Construction Phase I, Honouliuli, Hō'ae'ae, Waikele, Waipi'o, and Waiawa Ahupua'a, 'Ewa District, Island of O'ahu

TMK: [1] 9-1, 9-4, 9-6, 9-7 (various plats and parcels)

In the early 1940s, E. Craighill Handy made a survey of existing and remnant agricultural areas of the Hawaiian Islands. Of the Waiawa/Mānana floodplain, he says only that “there were a few terraces seaward, irrigated by Waiawa Stream” (Handy 1940:81). For Waikele, he states:

In the flatland, where the Kamehameha Highway crosses the lower valley of Waikele Stream, there are the remains of terraces on both sides of the road, now planted to bananas, beans, cane, and small gardens. For at least 2 miles upstream there were small terrace areas. [Handy 1940:82]

Handy (1940:82) noted that Hō‘ae‘ae had “a moderate-sized area of terraces watered by springs inland from West Loch of Pearl Harbor.” Handy (1940:82) was most impressed by the resources of Waipi‘o:

Between West Loch of Pearl Harbor and Loko Eo, the lowlands were filled with terraces which extended for over a mile up into the flats along Waikele Stream. The lower terraces were formerly irrigated partly from Waipahu Spring...It is said that terraces formerly existed on the flats in Kipapa Gulch at least 2 miles upstream above its junction with Waikele. Wild taros grow in abundance in upper Kipapa Gulch.

The second great resource for central ‘Ewa was the fisheries of Pearl Harbor, including the man-made fish traps and fish ponds. Handy and Handy (1972:240) noted that:

The primary reason for ‘Ewa’s prominence in history and as an *ali‘i* stronghold was undoubtedly the existence of the great number of fishponds at different points around Pearl Harbor, which was ‘Ewa territory. Two of the largest [Loko ‘Eo and Loko Hanaloa] were on Waipi‘o Peninsula...

The 1873 map of Honouliuli (see Figure 13) shows the locations of numerous *loko* (fishponds) adjacent to the West and Middle Lochs of Pearl Harbor, within the *ahupua‘a* of Waikele, Waipi‘o, and Waiawa. Apple and Kikuchi (1975:2) discuss the impact that fishponds had on the general population of an area:

Accessibility to these ponds and their products was limited to the elite minority of the native population - the chiefs and priests. Prehistoric ponds and pond products appear to have been taboo to the vast majority of Hawaiians and to have yielded them no direct benefit. However, indirect public benefit came from ownership by the chiefs of exclusive food sources. Royal fishponds...insured less demand on the commoners’ food production resources. Every fish taken from a royal fishpond left its counterpart in the natural habitat available to lesser chiefs and commoners.

The fishponds of ‘Ewa, although not necessarily representing beneficial resources for the commoners, can be seen as evidence for a thriving chiefly class in the *ahupua‘a*. One of the largest was Loko (pond) ‘Eo; *‘eo* is translated as “full of food” (Pukui and Elbert 1986:42). A 19th century visitor to Loko ‘Eo provided testimony on the abundant marine resources found in the area:

We rode and reached Waipio. Saw Halaulani House; only the house stood there for the inhabitants had gone to Mana. The bubbling water of the pond Eo rippled

on the left. There a recollection came of the bundles of fat eel from that place and the delicious mullet of Makahanaloa. It was delicious clean and that is why the very juice in the ti leaves was sucked up by Kohala's son. [*Ka Nūpepa Kū'oko'a* Aug. 11, 1899, cited in Sterling and Summers 1978:20]

3.2.3.2 Protestant Missionaries and Roman Catholic Priests

The first company of Protestant missionaries from America, part of the American Board of Commissioners of Foreign Missions (ABCFM), arrived in Honolulu in 1820. They quickly established churches in Kona, Hawai'i, Waimea, Kauai, and Honolulu, O'ahu. Although the missionaries were based in Honolulu, they traveled around the islands intermittently to preach to the rural Hawaiians and to check on the progress of English and Bible instruction schools set up by local converts.

In 1828, the missionary Levi Chamberlain (1956:39-40) made a circuit of O'ahu Island, stopping wherever there was a large enough population to warrant a sermon or to visit a school. In his trek through the 'Ewa District, coming from Wai'anae, he stopped at Waimanalo 'Ili in Honouliuli, on the western border of 'Ewa. At around 11 o'clock the next day, on a Saturday, Chamberlain and his companions set out towards the east, reaching Waikele at 3 or 4 o'clock. The group did not stop in Hō'ae'ae, suggesting that the population was too small for a school, but Waikele had two schools, an obviously a larger population than Hō'ae'ae. Chamberlain decided to stay in Waikele until the next day, on the Sabbath, and preach to the Hawaiians who lived there. A crowd of 150 to 200 gathered for the sermon. The next day at 6 o'clock they set out for the village of Waipi'o, which had one school. They left Waipi'o at about 8:30 and walked to Waiawa, where there were two schools. Around ten o'clock, they began their circuit again, stopping only in the *ahupua'a* of Kalauao in the 'Ewa District before they reached Moanalua Ahupua'a in the Kona District. The account does not give much information on the surroundings, but does indicate the relatively populated areas of 'Ewa, in western Honouliuli, Waikele, Waipi'o, Waiawa, and Kalauao, and the time it took to travel by foot along the trail across the 'Ewa District.

In the next years, the Protestant missionaries established smaller churches in outlying areas, sometimes presided over by a foreign missionary or led by a Hawaiian convert, with periodical visits by a visiting pastor from one of the main churches. The first mission in 'Ewa was established in 1834 in Waiawa, near Pearl Harbor. Two missionaries, Lowell and Abigail Smith, were assigned to the station, and were in charge of building a church and a house for themselves near the church (Hawaiian Mission Children's Society 1969:3-9). The *ali'i*, Kīna'u, daughter of Kamehameha I and an early Christian convert, offered the missionaries to "settle upon her land, will build us a house and do anything to promote our happiness" (letter from Lowell Smith, June 24th, 1833, cited in Frear 1934:69). Citing his wife's poor health, the Smiths went to Moloka'i instead. But at the General Meeting of the missionaries in June and July of 1834, the board decided that the Smith's should be transferred to 'Ewa, to a place three miles from the king's favorite country seat (Frear 1934:93).

Because of her health, Abigail at first stayed in Honolulu, as her husband began to build their new home. But in November, he brought his wife home to their new station:

November 15th, 1834...This morning at half past twelve o'clock Abba and myself left the mission families at Honolulu and took up our anchor—and on a double canoe we came to this place, Waiawa, in four hours...She finds the climate, the water, taro, etc. to agree with her much better than at Honolulu...Nov. 25th...We have been favored with considerable many presents since her arrival viz: some seven or eight fowls, four turkeys, one hog, fish, oysters, potatoes, taro, cabbage, wood, etc. [letters of Lowell Smith, cited in Frear 1934:95-96]

The Smith's congregation was spread out over an area of 20 miles, and Lowell Smith traveled to different areas to preach to crowds usually several hundred strong. He also established two schools, one for boys and one for girls, and treated the sick, especially inoculating his parishioners against smallpox. In 1836, Abigail's health deteriorated, and the mission decided that the two should live in Honolulu instead. To carry on the work at the mission, the Rev. Artemas Bishop and his family were transferred to 'Ewa. Sereno Bishop (1916:41-42), the son of Artemas Bishop, remembered the move:

Our predecessors at Ewa were Rev. and Mrs. Lowell Smith, specially capable and devoted missionaries who had been only two years in the field. Mr. Smith had built a comfortable house of adobe bricks, thatched with grass and well plastered inside and out. He had also erected the adobe walls of a church, capable of holding an audience of about one thousand people. I think the roof also was on...The adobe walls fifteen feet high were covered by a steeply pitched roof, which extended out in a verandah on all four sides, in order to protect the base of the mud walls from being destroyed by raindrip. The timbers of the roof were long beams dragged from the mountains entirely by human strength, the labor being secured by volunteering, under the leadership of the chiefs.

The mission house was located on the west bank of the Waiawa creek, about one-fourth mile northwest of the present railway station at Pearl City. There was nearly an acre of ground enclosed in an adobe wall. Some distance seaward was a glebe of a couple of acres of taro swamp, a little below where the railway bridge now crosses the creek. A small cattle pen was enclosed about twenty rods north. An old wall of the natives separated the upland from the planted lands and kept out the pigs and afterward the cattle. Copious springs of most delicious water abounded throughout the district of Ewa, a small one being in our own grounds.

In 1837, a new church was completed (Frear 1934:137) on a lot now part of the Leeward Community College. The church was described as:

An elegant church building, ninety feet long, forty two feet wide with a veranda all around it,--plastered inside and out, a good pulpit, etc., etc. The house will contain from ten to twelve hundred people. [letter from Lowell Smith Feb. 4th, 1857, cited in Frear 1934:115]

The Bishops had their main residence in Honolulu, as he assisted the minister of Kawaiaha'o Church, although he made monthly visits to 'Ewa. Bishop's official assignment at 'Ewa was from 1836 to 1856, but he continued to preach in 'Ewa until 1860.

Smaller churches were also established in neighboring *ahupua'a* of 'Ewa. In 1898, Hō'ae'ae was still considered a remote location. It did not merit its own church, but only a mission, with a missionary visiting irregularly. In 1898, there were branch churches at Pearl Harbor and at the Ewa Plantation (Hosmer 1898:148).

One of the main contributions by the missionaries was their establishment of a census of the population. In ca. 1832, the population of 'Ewa was about 4,015 (Ewa Station Report 1836:4). At the end of 1835 it was 3,423, "a decrease of 592 in 4 years" (Ewa Station Report 1836:4). Population stabilized in the 1830s and early 1840s. In the 1840s, depopulation increased with a measles epidemic in October of 1849. In January 1849, the population was 2,386 people. The pastor of the 'Ewa church noted that some of the depopulation was due to emigration, mainly to Honolulu. Sereno Bishop (1916:44) noted that many taro patches had been abandoned when his family lived in Waiawa. The smallpox epidemic of 1853-1854 shattered the remaining population:

The people of Ewa are a dying people. I have not been able to obtain an exact count of all the deaths & births since the last general meeting. But my impression is that there have been as many as 8 or 10 deaths to one birth. I have heard of but 4 births on Waiawa during the year, & all of these children are dead. I have attended about 20 funerals on that one land, & 16 of these were adults [Rev. L. Smith 1835. Ewa Station Report, p. 8-9].

In 1860, Artemas Bishop reported:

The people of the district are rapidly diminishing, and whole neighborhoods where in former years were numerous families and cultivated lands, there are now no inhabitants, and the land is left to run to waste. The fathers have died off, and the children wander into other parts, and there are none to fill their places [Bishop 1860, Ewa Station Report:1].

3.2.3.3 *The Māhele*

The Organic Acts of 1845 and 1846 initiated the process of the Māhele, the division of Hawaiian lands, which introduced private property into Hawaiian society. In 1848, the crown, the Hawaiian government, and the *ali'i* (royalty) received their land titles. The common people (*maka'āinana*) received their *kuleana* awards (individual land parcels) in 1850.

Hō'ae'ae

A total of 23 land claims were made in Hō'ae'ae Ahupua'a, with 19 claims awarded to commoners. All unclaimed lands in the *ahupua'a* were awarded to Nueku Nāmau'u as Māhele Award 63 (LCA 10474). Nāmau'u was a descendant of Hawai'i Island chieftains and a cousin (or nephew) to Mataio Kekūanao'a, the father of two Hawaiian monarchs, Alexander Liholiho (Kamehameha IV) and Lot Kapuāiwa (Kamehameha V) (Day 1984:69). The *kuleana* awards were clustered around the floodplain on the north shore of Pearl Harbor's West Loch, along Hō'ae'ae Stream, and along a large irrigation ditch, as shown on a 1905 map (Figure 20). The claimants were awarded *kula* lands (for dry land agriculture or pasture), *lo'i* (irrigated patches for taro), and house lots (Table 5).

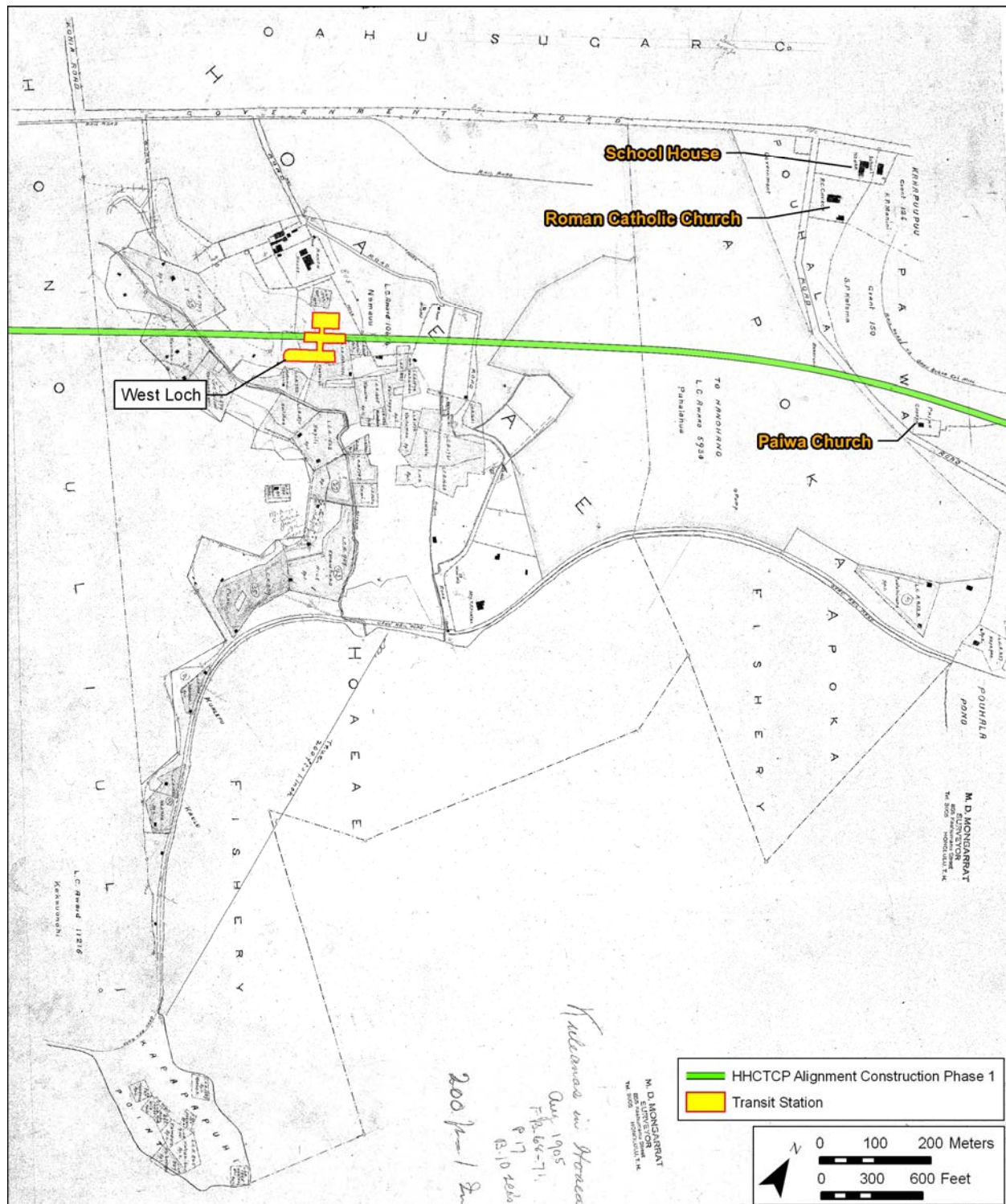


Figure 20. 1905 map of Hō'ae'ae, M.D. Monsarrat Surveyor, showing the location of the project area in relation to the irrigated taro lands of Hō'ae'ae (map on file at Hawai'i Land Survey Division, Honolulu)

Table 5. Land Commission Awards in Hō'ae'ae Ahupua'a

| LCA | Awardee | <i>'Ili</i> |
|-------|---------------|---|
| 193 | Rees, Lewis | |
| 750 | Mokumakuaole | Koipu, Kalokoloa |
| 887 | Kaihikapu | Kalaikea, Kapapapuhi, Kuainihi, Kalokoeli, Pakai |
| 889 | Puko | Waihi |
| 899 | Kahooweliweli | Amakeahilalo |
| 909 | Kaneiahuea | Paniu, Kalahale, Lihue, Kumuhau |
| 1533 | Kealaiki | Muki, Waihi, Kalokoeli |
| 1561 | Kaumanu | Amakeahiluna, Kamalokala |
| 1562 | Kapili | Kaaiiole, Koipuu |
| 1571 | Kalihue | Kamalokala |
| 1578 | Kaihumai | Laekea |
| 1582 | Kukahoe | Koipu |
| 1583 | Kekapa | Waihi |
| 1601 | Kekoamiki | Keahupuaa, Kaaiiole, Holokoeli |
| 1605 | Kaualei | Koipuiki, Koipu |
| 1660 | Ewa | Kahuu |
| 1707 | I | Kalokoeli |
| 1721 | Hinawale | Kuainiho, Kaaiiole |
| 5634 | Kaiwi | Kalokoeli, Koipuu |
| 10474 | Namauu | Ahupua'a |

Waikele

In the Māhele, the *ahupua‘a* of Waikele was awarded to the *ali‘i* Nahuina. He returned it to the government as a commutation fee to pay for the lands he kept for himself. Much of the most productive lands of the *ahupua‘a* were awarded to several *ali‘i* as ‘*ili* awards, such as: the 199-acre award of Auiole ‘Ili to Nāmāhana and Maawe; the 252-acre award of Koalipea ‘Ili to Nāmākehā; and the 2829-acre award of Pouhala ‘Ili to Lūlūhiwalani. In all, 119 land claims were made in Waikele Ahupua‘a, with 73 claims awarded (Table 6).

Taro lands were found at the floodplains along Pearl Harbor, and at inland areas adjacent to the lower section of Kīpapa Stream, along both sides of Waikele Stream, and along Waikakalaua Stream near the upper boundary of Waikele. The taro was irrigated by the water of the streams and by springs at the base of the bluffs, including the famous Waipahu Spring. The lower portion of the floodplain was used for fishponds. *Kula* lands were used for the cultivation of coconut, breadfruit, and pandanus, and for pasture. In a review of a sample of the *kuleana* awards, Cordy (1997:7) noted that approximately 50% mentioned a house lot as part of their claims.

The ‘*ili* and Land Commission Awards of Waikele are shown on three maps: the 1905 map of Hō‘ae‘ae (see Figure 20), which shows portions of the ‘*ili* of Apoka, Pouhala, and Pā‘iwa in Waikele; an 1875 map (Figure 21), which shows the ‘*ili* names and boundaries; and an 1889 map (Figure 22), which shows the Land Commission Awards. Of particular interest on these maps is the relationship of the project area to two churches, one labeled “Paiwa Church,” located approximately 50 meters south of the project area (Figure 22), and a Roman Catholic Church and school house located 300 meters north of the project area (see Figure 20).

The Roman Catholic diocese, based in Honolulu, began to send priests to convert native Hawaiians to Catholicism in the ‘Ewa region as early as the 1840s. A small chapel had been built in Waipahu (Waikele Ahupua‘a) in the late 1860s by Father Delelante, but as the population grew the Catholic Mission decided to build a church, and acquired a lot adjacent to a school built in 1899 (site of today’s Waipahu Elementary School, on the *mauka* side of Farrington Highway) (see Figure 20). The church, called St. Joseph’s, was completed in 1902 (Schoofs 1978:88). The church had an adjacent cemetery, on the east side of Waikele Street. This is shown as a small block on the west side of Waipahu Elementary School on modern maps. However, the cemetery area once stretched from the elementary school grounds makai, to the vicinity of Farrington Highway (Mauricio 1997:9), as shown on an 1898 map (Figure 23). According to a *Honolulu Star Bulletin* article (Adamski 1999), this cemetery was used by the Catholic Portuguese and Filipino workers of the Oahu Sugar Company. The last interment at the cemetery was in 1941 and the cemetery was subsequently abandoned. Residential apartments were later built on a portion of the site, and many of the burials were moved to Mililani Memorial Park. It is possible that some burials were overlooked during this operation, and that there may still be burials in the vicinity.

In 1939, St. Joseph Church had become termite-infested, and a new site (east of the area marked “Paiwa Church” on the *makai* side of Farrington Highway) for the church was chosen. In 1946, St. Joseph School was established adjacent to the west side of the church.

Table 6. Land Commission Awards in Waikele Ahupua'a

| LCA | Awardee | 'Ili | | LCA | Awardee | 'Ili |
|--------|----------------|---|--|--------|------------------------------|--|
| 4 MA | Luluhiwalani | Pouhala | | 1614 | Kekualilii | Kahakuohia |
| 39 MA | Kauliokamoa | Kapakahi | | 1675 | Mahoe | Kamohai |
| 61B MA | Namakeha | | | 1675-B | Koniho | Papaa |
| 60 | Hunt, Thomas | | | 1675-D | Makalolohe | Kapakahi |
| 130 | Kuapanio | Papaa Komohana | | 1675-E | Kaneolei | Ulumoku |
| 851 | Hiwauli, Salai | Papa | | 1675-F | Kaneiakama | Koheoo, Kahakuohia, Keahupuaa, Manooelua (Waipio, Waikele) |
| 857 | Kapepee | Pouhala | | 1679 | Pala | Hopenui, Ulumanu |
| 858 | Kanealoha | Waipahu, Pouhala | | 1680 | Pauoa | Lihue |
| 858-B | Puolohinana | Pouhala | | 1682 | Puhi | Kapakahi, Keahupuaa, Kaohai |
| 858-C | Pokini | Pouhala, Paahao | | 1682-B | Kualii | Kapakahi |
| 859 | Kalauao | Lihue, Pouhala, Ohua | | 1712-B | Hopu | Kaokai |
| 860 | Kaaihee | Paahao | | 1712-C | Nuuanu | Kapuna, Keahupuaa |
| 880 | Niulii | Kahapuupuu | | 1716 | Hauna | Kanupo |
| 888 | Ilikealani | Waipahu | | 1812 | Ka'u | Kahakuohia |
| 890 | Kuhano | Ohua | | 2944 | Marini, P.F. & Marini, Akoni | Kapuukolo, Puiwa, Kekupanio, Lihue |
| 891 | Kaakiakiaho | Kahapuupuu | | 3848 | Puhalahua | Apokaa (Waikele, Honuakaha) |
| 896 | Nalii | Pouhala | | 5531 | Keawe | Kapakahi |
| 898 | Kaneaola | Polapola, Kahawai, Hiwa (Honouliuli, Waikele) | | 5595-B | Kapahu | Kapakahi |
| 908 | Kaniu | Ohua | | 5595-C | Napupu | Ulumoku |
| 913 | Napihe | Kahakuohia | | 5602 | Koliola | Halehalekaiwi, Kaohai, Kapuna |
| 1005 | Kahiki | Pouhala | | 5603 | Kookoo | Kapakahi |
| 1008 | Ku | Papaa | | 5663 | Kahonu | Pahoa, Paahoa |

| LCA | Awardee | <i>‘Ili</i> | | LCA | Awardee | <i>‘Ili</i> |
|--------|--------------------|------------------------------|--|--------|---------------------|---------------------------|
| 1009 | Kahanu | Napuakalo | | 5762 | Kuaihelani | Papaa, Kapakahi, Ohua |
| 1010 | Kahookohu | Papaa | | 5811 | Kumumu | Hanaloa (Waipio, Waikele) |
| 1011 | Kakualopa | Papaa | | 5846 | Kalou | Kapakahi, Kapuna |
| 1013 | Muhu | Ulumalu | | 5848 | Kaupuaa | Kapakahi |
| 1015 | Kuheleloa | Paahao | | 5930 | Puhalahua | Hanohano |
| 1016 | Haole | Ulumalu | | 5989 | Makole | Kapakahi |
| 1018 | Palaualelo, wahine | Pouhala | | 6025 | Kahaekaua | Ulumanu |
| 1020 | Akaakaa | Waipahu | | 6545 | Haalilio, Hana Hupa | Ohua |
| 1021 | Maawe | Auiole | | 7260 | Namakeha, B | Kaalaaluna, Kaolipea |
| 1022 | Piimahina | Paiwa | | 7442 | Kuauli | Kahakuohia |
| 1576 | Kamole | Kahapuupuu | | 8597 | Kamoana | Paiwa |
| 1597 | Kaihumua | Kapuna, Kamapuna, Auiole | | 9384-B | Kahula 2 | Papaa |
| 1613 | Kaihunana | Kahakuohia | | 9384-C | Kahula 1 | Papaa |
| 1613-B | Huailua | Paiwa | | 10184 | Namahana | Auiole |
| 1614-B | Hookaamom i | Ahualii, Mikiokai, Keahupuaa | | 10831 | Puniwai | Kanupoo |

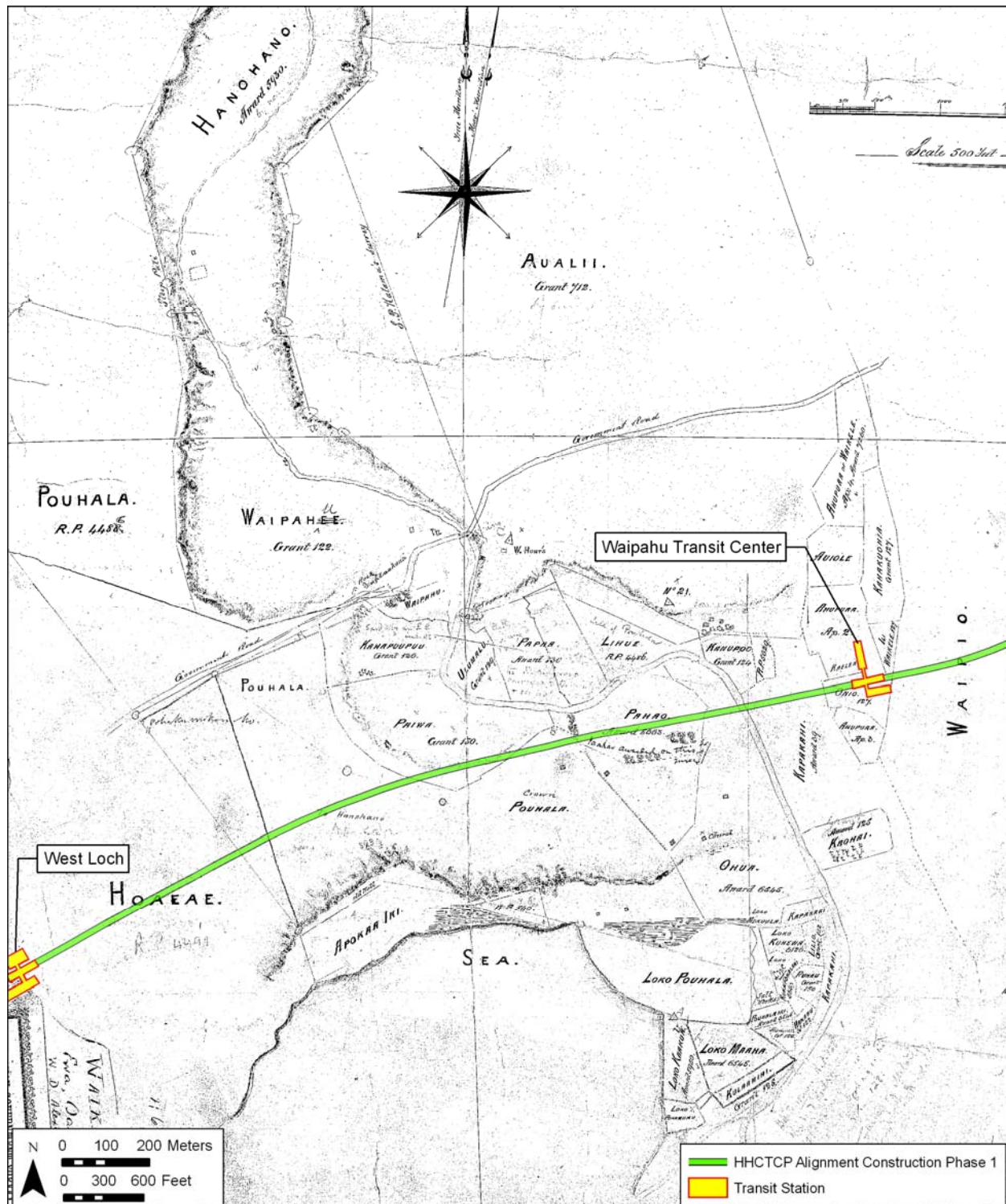


Figure 21. 1875 Map of Waikēle, W.D. Alexander Surveyor, showing 'ili in the vicinity of the project area (Registered Map No. 120, Hawai'i Land Survey Division)



Figure 22. 1889 Map of Waikele, showing the location of the project area in relation to the irrigated taro lands of Waikele (Registered Map No. 1498, Hawai'i Land Survey Division)

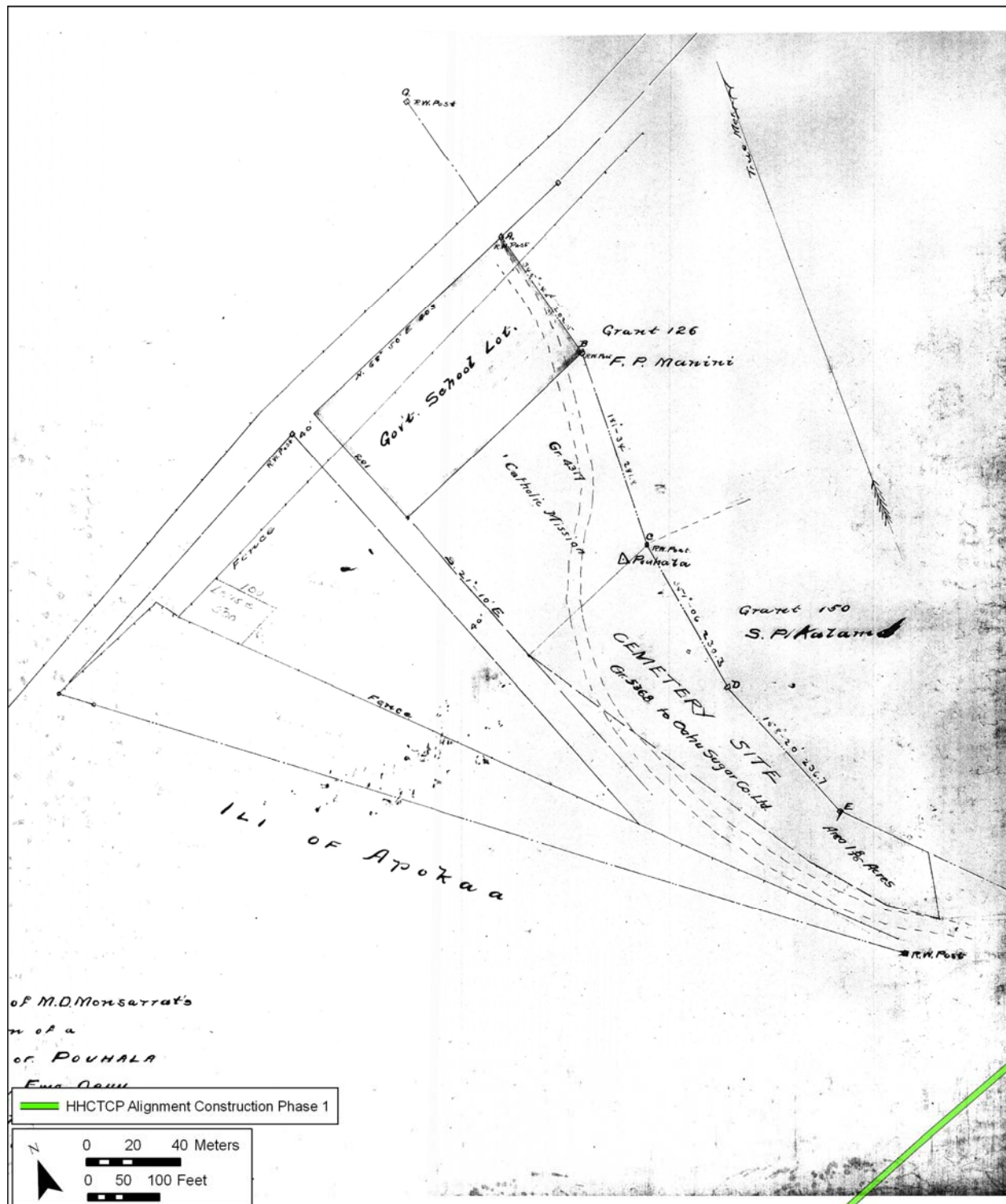


Figure 23. 1898 Map of the Pouhala 'Ili School Lot in Waikele Ahupua'a, showing the extent of the Catholic Cemetery, which once extended *makai* (seaward) to the vicinity of Farrington Highway (Registered Map No. 1950, Hawai'i Land Survey Division)

An extensive search was made on any information regarding “Paiwa Church.” The church was located in the *‘ili* of Pā‘iwa, thus its name. The church is labeled as “Paiwa Church on the 1889 map of Waikele (see Figure 22) and on the 1905 map of Hō‘ae‘ae (see Figure 20). Paiwa Church was likely a Christian church for native Hawaiians, as Christian churches for the Japanese, Chinese, and Korean plantation workers were not established in the ‘Ewa area until ca. 1905 (Chang 2003:38). It may have been related to the St. Joseph Catholic Church or it could have been a small branch church of the ‘Ewa Protestant Mission Station at Waiawa. The proximity of this church to the project area is important as churches established before 1900 often have undocumented graves in adjacent cemeteries.

Waipi‘o

John Papa ‘Ī‘ī was awarded most of the *ahupua‘a* of Waipi‘o in LCA 8241, comprising approximately 20,540 acres including Loko ‘Eo, seen on an 1851 map (Figure 24). Included in the documentation for ‘Ī‘ī’s award is a list of “the people living on the land of Waipi‘o ‘Ewa in 1848” (Barrere 1994:73). A substantial grant within the *ahupua‘a* was awarded to Abenera Pākī, Bernice Pauahi Bishop’s father. Part of LCA 10613 given to Pākī comprised the 350 acres of the *‘ili* of Hanaloa. William Harbottle also received a land award (LCA 2937) in Waipi‘o; he claimed two acres at Hanapouli ‘Ili.

119 additional land claims were documented in Waipi‘o, with 78 claims being awarded (Table 7). The majority of awarded land parcels were located in the *makai* portions of Waipi‘o, at or just above Waipi‘o Peninsula. Predominant among the claimed land usages in Waipi‘o are: 312 *lo‘i* (irrigated taro patches) of various sizes; and 43 *mo‘o*, or fields, comprising indeterminate numbers of *lo‘i*. Wetland taro cultivation was the primary agricultural pursuit within the *ahupua‘a* in the mid-19th century, and likely reflects a long history of taro farming. At the coast, four fishponds were claimed. In the *mauka* reaches of Waipi‘o, 53 claims were made for portions of *kula* (pasture land) and 25 for “*okipu*” or “*okipu‘u*” (forest clearings). The fact that several claims were made in the *mauka* regions suggests that Waipi‘o residents had particular locales that they traveled to repeatedly. *Kula* land is a general term for open fields, pastures, uncultivated fields, or fields for cultivation, and upland (drier), which is distinct from meadow or wetland (Lucas 1995:60). *Kula* lands were often used for opportunistic plantings such as bananas, sugar cane, sweet potatoes, dry land taro, and others that did not depend heavily on a consistent source of water. *Okipu‘u* is defined as a forest clearing (Lucas 1995:82), a place that was presumably used to gather forest products and medicinal herbs and or for pasturage.

In contrast to the well-populated *makai* lands of Waipi‘o, the *mauka* regions were often described in 19th century accounts as virtually uninhabited. The missionary William Ellis described the interior regions of ‘Ewa in 1823-24:

The plain of Eva is nearly twenty miles in length, from the Pearl River to Waialua, and in some parts nine or ten miles across. The soil is fertile, and watered by a number of rivulets, which wind their way along the deep water-courses that intersect its surface, and empty themselves into the sea. Though capable of a high state of improvement, a very small portion of it is enclosed or under any kind of culture, and in traveling across it, scarce a habitation is to be seen. [Ellis 1963:7]

Table 7. Land Commission Awards in Waipi'o

| LCA | Awardee | 'Ili | | LCA | Awardee | 'Ili |
|---------|-------------------------|---|--|---------|------------|--|
| 21 MA | Honu | Ulu | | 8241-K | Kuhiwahiwa | Homaikaia, Hanaloa |
| 26 MA | Kailakamoa | Honopue | | 8241-KK | Kaiki | Pakikakika |
| 1616 | Kaluahinenui | Homaikaia | | 8241-L | Mokunui | Kamalo, Kauhola |
| 1675-F | Kaneiakama | Koheoo, Kahakuohia, Keahupuaa, Manooelua | | 8241-LK | Kaholohana | Hanaupouli |
| 1685 | Peke | Kapaia, Waikaka | | 8241-LM | Ai | Hanaloa, Holoamana, Homaikaia |
| 1712 | Hinaakala | Hanaloa | | 8241-LN | Nahua | Kaakaulani, Kanonoukuono, Nakumei, Waihaka |
| 3043 | Kapiipo | | | 8241-M | Kupokii | Eo |
| 3794 | Luheluhe | Kaalakea, Hanapouli | | 8241-MM | Puhipaka | Aimauino, Himauona, Waihaka |
| 3972 | Hinaumai | Hopenui | | 8241-N | Ukeke | Lelepua |
| 5371 | Ehu | Hanaloa, Keahupuaa | | 8241-NN | Luaka | Kionaole, Kaahukaua, Hanaloa |
| 5604 | Kaahuewalu | Hanaloa | | 8241-O | Manuwa | Halaula, Waihaka |
| 5606 | Kapela | Homaikaia, Hanaloa | | 8241-P | Uma | Halaula, Waihaka |
| 5647 | Kaia | Kalualaea, Eo, Hanaloa | | 8241-PN | Kahea | Mauoha |
| 5811 | Kumumu | Hanaloa (Waipio or Waikele) | | 8241-PP | Ulakaipo | Hopenui |
| 5972 | Manoha | Mohoa | | 8241-PW | Kupehe | Keahupuaa |
| 5998-B | Puou | Homaikaia | | 8241-Q | Kamakahi | Kuana, Waianeki |
| 6076 | Humehume | Puopae | | 8241-R | Meahale | Waiakapuaa |
| 8241 | Ii, Ioane / Ii, John | Pawaa, Kalawahine (probably Honolulu) | | 8241-RR | Poikeo | Halaula |
| 8241-AB | Palekaluhi | Kamuku, Lapili | | 8241-RS | Keliikuhoe | Kahema, Waihaka, Pakikakika |

| LCA | Awardee | ʻIli | | LCA | Awardee | ʻIli |
|---------|-----------------|--------------------------------|--|---------|-------------|----------------------------|
| 8241-BB | Koleaka | Homaikaia | | 8241-S | Niau | Eo, Waihaka |
| 8241-BP | Kalauili | Kaahukahua, Kumupali | | 8241-SM | Ohilau | Hopenui, Laauli |
| 8241-BS | Kahuailana | Kukina, Waihaka | | 8241-SS | Kauhiohewa | Hanapouli, Kahaole |
| 8241-CB | Keawekolohe | Homaikaia, Hanaloa | | 8241-T | Kailio | |
| 8241-CC | Poupou | Papa, Leoiki | | 8241-U | Kailihao | Kapoipuka |
| 8241-CM | Manoha | Mohoa | | 8241-US | Nahola | Homaikaia |
| 8241-CO | Paakiki | Halaula, Waihaka | | 8241-UU | Kalaiku | Waipio uka, Lelepua |
| 8241-CW | Leoiki | Hopenui | | 8241-V | Kauluoaiwi | Honauaka, Waipio uka |
| 8241-D | Makaaloha | Halaula, Waihaka | | 8241-W | Kaneakauhi | Kaohai |
| 8241-DD | Kalili | Aimalino, Eo, Waihaka | | 8241-WW | Pi | Papohaki |
| 8241-DO | Hana | Pakikakika, Puopae, Eo | | 8241-X | Halelaau | Kopilau, Hokapiele |
| 8241-E | Kapule | Eo, Puuopae, Kalualaea | | 8241-Y | Hepa | |
| 8241-F | Kaumiumi | Hoomaikaia, Lepau, Keakiula | | 8241-Z | Kaioe | Moakea, Puulu, Palikeya |
| 8241-G | Ope | Homaikaia, Lepau | | 10512 | Nahuina | Kauaka |
| 8241-GG | Kauhi | Kahaole, Hanaupouli | | 10613 | Paki, Abner | |
| 8241-GH | Moku | Kalualaea | | 11190 | Kanae, S. | Keahupuaa |
| 8241-GO | Kawahine-lawaia | Keio | | 11193 | Kailianu | Lepau, Kanakahiloko] |
| 8241-H | Kamaka | Lepau, Kauakahiki | | 11195 | Kini | Waihaka |
| 8241-HH | Paumano | Eo, Kamalua | | 11199 | Kauaila | Kalualaa, Puuopae |
| 8241-I | Puakea | Halaula, Puualaea | | 11200 | Kihewa | Ioiki, Puuopae |
| | | | | 11205 | Kalaiku | Lelepua |

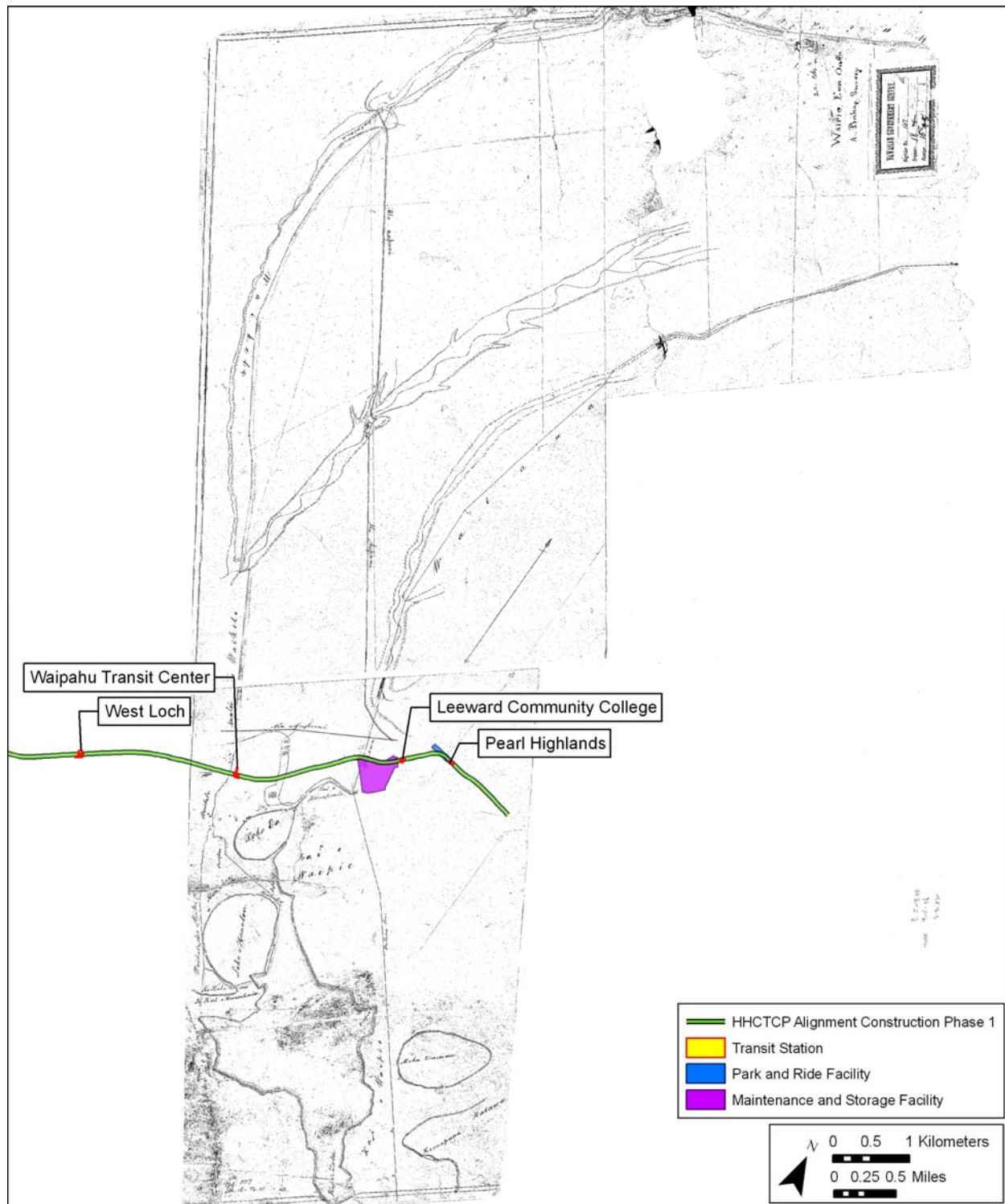


Figure 24. 1851 Map of Waipi'o by Rev. Artemas Bishop, showing the Waipi'o lands of John Papa 'I'i (Registered Map No. 107, Hawai'i Land Survey Division)

Despite Ellis' impressions, there is evidence that during the early 19th century, the Waipi'o population was not solely focused on the fertile coast. In an inventory of advances in education during the reign of Kamehameha III (from 1825 to 1854), "schools were built in the mountains and in the crowded settlements. Waipi'o had school houses near the coast and in the uplands" (Kamakau 1992:424). The placement of a school "in the uplands" of Waipi'o suggests that some portion of the *ahupua'a* population had settled there.

During the 1830s, cattle grazing began in the *mauka* regions of Waipi'o (Bishop 1901:87). In 1847, residents of more *makai* land petitioned the Minister of the Interior, John Young, to resolve the problem of stray animals. These stray animals may have been from herds of cattle and goats grazing on Waipi'o's *kula* lands. In addition to damage from stray animals on the lands of Waipi'o, the impact of grazing animals was noted several kilometers away at Pearl Harbor. Stray cattle continued to be a problem until large-scale agriculture was introduced just prior to the beginning of the 20th century. The occupation of the uplands by cattle denuded the countryside of ground cover, and caused vast quantities of earth to be washed down by storms into the lagoons, shoaling the water for a long distance seaward (Bishop 1901:87).

John Papa 'Ī'ī was born in Waipi'o Ahupua'a at the beginning of the 19th century, and was placed in the household of Liholiho (Kamehameha II) when he was ten years old. He became Liholiho's personal attendant and also maintained records of life in the Hawaiian Kingdom. An account of 'Ī'ī's birth details the establishment of his family at Waipi'o after the ascendancy of Kamehameha on O'ahu:

John Papa 'Ī'ī was born in Kūmelewai, Waipi'o, in 'Ewa, O'ahu, on the third day of August (*Hilinehu* in the Hawaiian calendar) in 1800, on the land of Papa 'Ī'ī, whose namesake he was. Papa ['Ī'ī's uncle] was the owner of the pond of Hanaloa and two other pieces of property, all of which he had received from Kamehameha, as did others who lived on that *ahupua'a*, or land division, after the battle of Nu'uuanu. He gave the property to his *kaikua hine*, or cousin, who was the mother of the aforementioned boy. Her names were Wanaoa, Pahulemu, and Kalaikane. ['Ī'ī 1959:20]

'Ī'ī's writings provide glimpses of life within Waipi'o Ahupua'a during his lifetime. 'Ī'ī mentions the "family [going] to Kīpapa from Kūmelewai by way of upper Waipi'o to make ditches for the farms" ('Ī'ī 1959:28) and recalls that, during the visit to O'ahu by the Kaua'i chief Kaumuali'i and his entourage, the chief's attendants were provided with gifts: "From Waipi'o in 'Ewa and from some lands of Hawai'i came *tapa* made of *mamaki* bark" ('Ī'ī 1959:83). 'Ī'ī notes how a period of famine was managed in Waipi'o and what resources were available during the famine:

Here is a wonderful thing about the land of Waipi'o. After a famine had raged in that land, the removal of new crops from the taro patches and gardens was prohibited until all of the people had gathered and the farmers had joined in thanks to the gods. This prohibition was called "*kapu 'ohi'a*" because, while the famine was upon the land, the people had lived on mountain apples [*'ohi'a 'ai*], *ti*, yams, and other upland foods. On the morning of Kane, an offering of taro greens and other things was made to remove the '*ohi'a*' prohibition, after which each farmer took of his own crops for the needs of his family. ['Ī'ī 1959:77]

The end of the 18th century and beginning of the 19th century marked Hawai'i's entry into world trade networks. One of the chief exports at this time was sandalwood (*Santalum* sp.) or *'iliahi*, which was prized in China for its unique fragrance and used in the manufacture of household items, as incense, as perfume, and as medicine (St. John 1947:13). The central plains of 'Ewa supplied the Hawaiian Kingdom with *'iliahi*. One of the first generation missionaries, Sereno Bishop (1901), described his memories of the central O'ahu region in the 1830s:

Our family made repeated trips to the home of Rev. John S. Emerson at Waialua during those years. There was then no road save a foot path across the generally smooth upland. We forded the streams. Beyond Kipapa Gulch the upland was dotted with occasional groves of Koa trees. On the high plains the *ti* plant abounded, often so high as to intercept the view. No cattle then existed to destroy its succulent foliage. According to the statements of the natives, a forest formerly covered the whole of the then nearly naked plains. It was burned off by the natives in search of sandalwood, which they detected by its odor burning. [cited in Sterling and Summers 1978:89]

After John Papa 'Ī'ī's death in 1870, his estate--including the Waipi'o lands-- was inherited by his daughter Irene 'Ī'ī Brown. Shortly after, small parcels within the *ahupua'a* were sold off (Barrere 1994:75).

Waiawa

During the Māhele, Waiawa Ahupua'a was awarded to Princess Victoria Kamāmalu (sister of Kamehameha IV and V) as part of LCA 7713. During the second half of the 19th century, Waiawa was passed on to successive members of the *ali'i*. Victoria Kamāmalu died in 1866 at the age of twenty-seven. Her entire estate was inherited by her father, Mataio Kekūānao'a. Kekūānao'a died two years later and the estate went to Kekūānao'a's son Lot Kapuāiwa, who by that time reigned as Kamehameha V. Kapuāiwa died intestate in 1872, whereupon Ruta Ke'elikōlani, Kapuāiwa's half-sister, petitioned for and received in 1873 the entire estate. By 1883, Ruta Ke'elikōlani died, leaving her estate to her cousin Bernice Pauahi Bishop (Kame'eleihiwa 1992:309-310). The Kamehameha Schools (Bernice Pauahi Bishop Estate) presently retains ownership of most of the *ahupua'a*.

57 *kuleana* land claims were made in Waiawa, with 31 claims awarded (Table 8). One of these was an award to the American Board of Commissioners for Foreign Missions (ABCFM). LCA 387 to the ABCFM comprised 4.13 acres in the *makai* portion of Waiawa, and included a salt pond, a *mo'o* (land strip) for the church, and a house lot. Making the application was Artemis Bishop, the Protestant missionary stationed at 'Ewa from 1836-1856, drew a map of the Waiawa *kuleana* awards in 1887 (Figure 25). Another claim by a non-Hawaiian was made by William Wallace in LCA 10942, which comprised 3.2 acres, including a house lot, 2 *mo'o*, and 6 *lo'i*. The remaining 50 claims (for individual *'āpana*) by 29 claimants in Waiawa were for *kuleana*. The claims included 28 house lots, 176 taro *lo'i*, 20 fishponds, 23 *kula* or pasture, 8 *paukū 'auwai* [length of ditch], and 7 banana *kula*. The 31 awarded claims were all located in the *makai* portion of the *ahupua'a*. While the uplands of Waiawa were probably used for the procurement of resources, there is no evidence of permanent habitation in traditional Hawaiian times.

Table 8. *Kuleana* Land Commission Awards in Waikele Ahupua'a

| LCA | Awardee | 'Ili | | LCA | Awardee | 'Ili |
|------|--------------|---|--|--------|------------|-----------------------|
| 879 | Puakai | Panaio, Kapuaihalulu, Kainalu | | 5644 | Kamalii | Kuhia |
| 882 | Poonui | Mooiki | | 5646 | Kaionio | Panaio |
| 904 | Naheana, Noa | Panio, Kahoaiai, Kuhia, Panaio | | 5847 | Kapaa | Hanakehau |
| 1594 | Keawe | Honokehau | | 6086 | Makanui | Hanakehau, Ananakehau |
| 1604 | Kakoo | Kuhiawaho | | 9294 | Kekeni | Piliaumoa |
| 1683 | Peahi | Panaio | | 9320 | Keoho | Kapaloa |
| 1696 | Namomoku | | | 9357B | Opunui | Panaio |
| 1711 | Hanamaulu | Kuhiawaho | | 9358 | Kaanuu | Kapuaihalulu |
| 1715 | Haa | Kuhuoloko | | 9362-B | Naone | Kapuaihalulu |
| 2146 | Paahana | Kapuaihalulu | | 9376 | Kupihea | Kapaloa |
| 2448 | Kikane | Panio, Kapuaihalulu | | 9377 | Lio | Kapaloa, Haleaha |
| 2685 | Ohia | Holoipiapia, Kapuaihalulu | | 9384 | Nahalepili | Kapoupou |
| 4213 | Kauhi | Holoipiapia, Kahoaiai, Kapuaihalulu, Kalona | | 9409 | Puhiki | Kaakauwaihau |
| 4529 | Ohia | Holoipiapia, Kapuaihalulu | | 10567 | Ohulenui | Kapuaihalulu, Kolona |
| 5591 | Kekua | Kahoeae | | 10942 | Wallace | Kahoaiai |

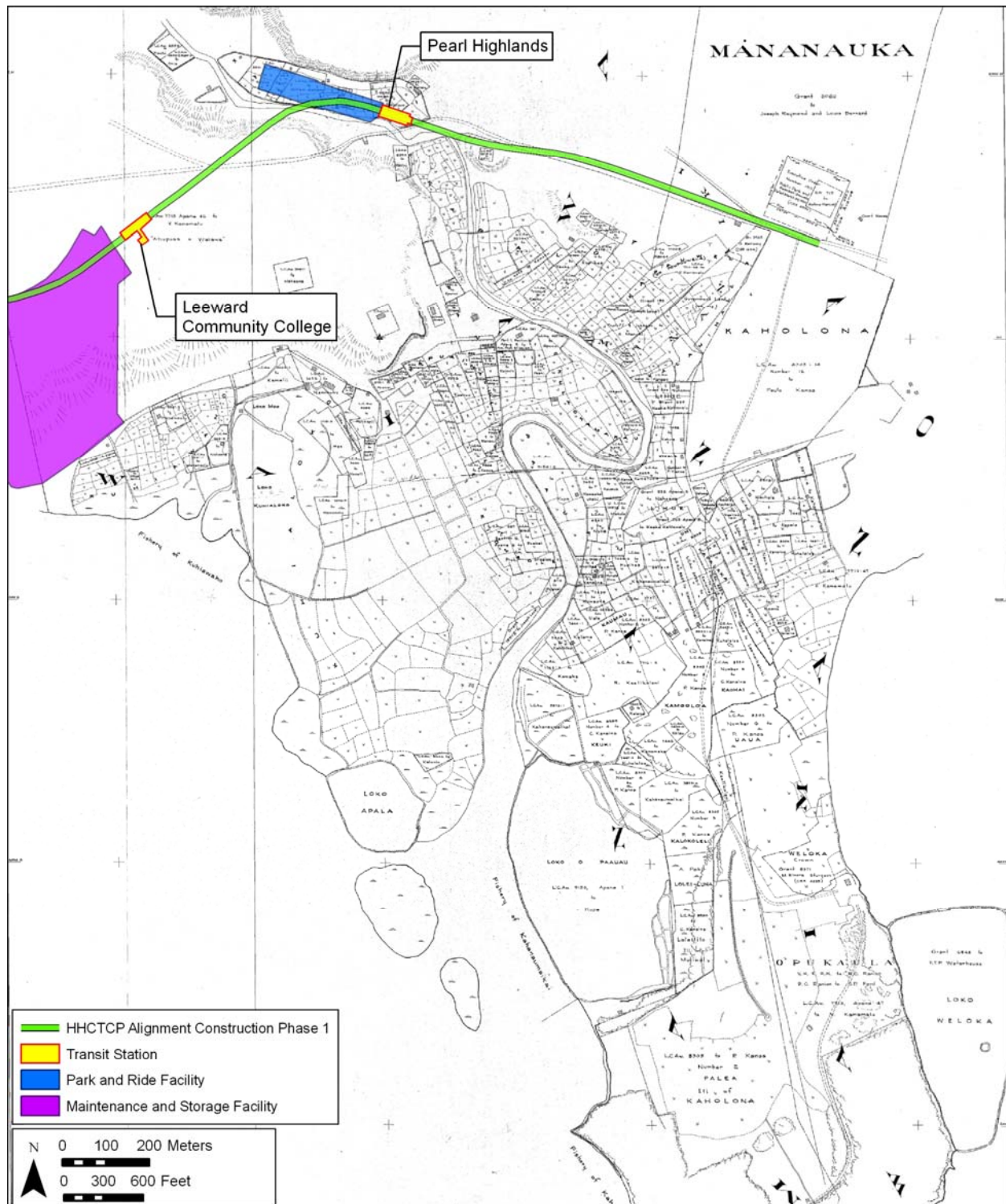


Figure 25. 1887 Map of Waiawa, Mānana, and Waimano by Rev. Artimas Bishop, showing the location of the project area in relation to the irrigated taro lands of Waiawa (Registered Map Mo. 1258, Hawai'i Land Survey Division)

Land Commission Awards in the Vicinity of the Hō'ae'ae, Waikele, Waipi'o and Waiawa Ahupua'a Portions of the Project Area

The distribution of LCA parcels generally reflects the distribution of the population in these four *ahupua'a* in the mid-19th century. In all four cases, the bulk of the *ahupua'a* was awarded to one or more *ali'i*, government officials, or foreign residents favored by the throne. Nearly all *kuleana* awards were granted for small land claims on the low floodplains near Pearl Harbor.

Thirty-seven LCA claims were awarded in the vicinity of the project area. Four of these were large awards to *ali'i* (Table 9). The remaining LCA claims reflect the agricultural nature of the region: nearly all of the 33 *kuleana* awards included *lo'i* (irrigated pond fields – an average of two *lo'i* per award); half of the awards included *kula*; and a third of the awards included house lots. Many of the LCA claims were clustered near the Government Road, which ran *mauka* of the floodplains.

In summary, the project area in Central 'Ewa traverses the former irrigated taro fields of Hō'ae'ae and Waikele, near Pearl Harbor. The project area also passes through former taro lands in Waipi'o, though this area was primarily owned by one man, John Papa 'Ī'ī. In Waiawa, the project area extends through a cluster of LCA parcels adjacent to Waiawa Stream.

3.2.3.4 The Oahu Sugar Company and the Waiahole Ditch System

In 1889, Benjamin Dillingham organized the Oahu Railway and Land Company (O.R. & L.). The railroad connected the outlying areas of O'ahu to Honolulu. By 1890, the railroad reached from Honolulu to Pearl City and continued on to Waianae in 1895, to Waialua in 1898, and to Kahuku in 1899 (Kuykendall 1967:100).

In 1897, B.F. Dillingham established the Oahu Sugar Company on 12,000 acres of land leased from the estates of John Papa 'Ī'ī, Bishop, and Robinson. The Oahu Sugar Company had over 900 field workers, composed of 44 Hawaiians, 473 Japanese, 399 Chinese, and 57 Portuguese. The first sugar crop was harvested in 1899, ushering in the sugar plantation era in Waipahu (Ohira 1997).

Prior to commercial sugar cultivation, the Oahu Sugar Company lands were described as being “of near desert proportion until water was supplied from drilled artesian wells and the Waiahole Water project” (Condé and Best 1973:313). In 1890, Dillingham had successfully promoted the Ewa Plantation Company, the sprawling sugar company just south of the Oahu Sugar Company. Artesian wells had converted those arid 'Ewa lands into a thriving plantation, and Dillingham recognized the same potential in the Oahu Sugar Company lands.

Water to irrigate the *mauka* (upland) cane fields was initially pumped to elevations of 500 feet by some of the “largest steam pumps ever manufactured” (Dorrance and Morgan 2000:49). The expense of pumping water to the high elevations of the plantation led to the proposal to transport water from the windward side of the Ko'olau Mountains. The Waiahole Water Company was formally incorporated in 1913, and was originally a subsidiary of the Oahu Sugar Company. The Waiahole Ditch was designed by engineer Jorgen Jorgensen, with recommendations by engineer J.B. Lippencott, and assisted by W.A. Wall. The original system, when completed, included: 27

Table 9. Hō'ae'ae, Waikele, Waipi'o and Waiawa Ahupua'a Land Commission Awards in the Vicinity of the Project Area

| LCA | Ahupua'a | 'Ili (listed west to east) | Contents of Award |
|-----------------|------------------|--|--|
| 1707:2 | Hō'ae'ae | Kalokoeli | 3 <i>lo'i</i> and 1 <i>kula</i> |
| 1561 | Hō'ae'ae | Amakeahiluna, Kamalokala | 2 <i>lo'i</i> and 1 <i>kula</i> |
| 899 | Hō'ae'ae | Amakeahilalo | 1 house lot (1 house), 5 <i>lo'i</i> , and 1 <i>kula</i> |
| 750 | Hō'ae'ae | Koipu, Kalokoloa | 5 <i>lo'i</i> |
| 1571 | Hō'ae'ae | Kamalokala | 1 house lot (1 house), 1 <i>lo'i</i> , and 1 <i>kula</i> |
| 1533 and 1696 | Hō'ae'ae; Waiawa | Muki, Waihi, Kalokoeli | 1 house lot (1 house), 4 <i>lo'i</i> , 1 <i>kula</i> |
| 887:1 | Hō'ae'ae | Kalaikea, Kapapahu, Kuainihi, Kalokoeli, Pakai | 1 house, 1 <i>kula</i> , and 5 <i>lo'i</i> |
| 1578:2 | Hō'ae'ae | Laekea | 1 <i>lo'i</i> and 1 <i>kula</i> |
| 5930 | Waikele | Hanohano | 'ili of Hanohano to Puhalahua |
| 858:2 | Waikele | Pouhala, Waipahu | 5 <i>lo'i</i> and 1 fishpond |
| 857:1 | Waikele | Pouhala | 1 house lot (2 houses) |
| 1018 | Waikele | Pouhala | 1 house lot (1 house) and 1 <i>kula</i> |
| 860:1 and 860:2 | Waikele | Paahao | 1 house lot (1 house), 6 <i>lo'i</i> , and 2 salt lands |
| 1005:1, 2 and 3 | Waikele | Pouhala | 4 <i>lo'i</i> and 1 <i>kula</i> |
| 858-C:2 | Waikele | Pouhala, Paahao | 5 <i>lo'i</i> |
| 1015:1 | Waikele | Paahao | 1 house lot (1 house), 3 <i>lo'i</i> , and 1 <i>kula</i> |
| 5663:1 | Waikele | Pahoa, Paahoa | 'ili of Pahao (14.37 acres) to Kahonu |
| 908 | Waikele | Ohua | 1 <i>lo'i</i> |
| 6545:1 | Waikele | Ohua | 'ili of Ohua (30.32 acres) to Hana Hupa Haalilio |
| 5989:1 | Waikele | Kapakahi | 3 taro patches (<i>lo'i</i>) and 1 pasture (<i>kula</i>) |
| 1682-B: | Waikele | Kapakahi | 2 <i>lo'i</i> |
| 1614-B:2 | Waikele | Ahualii, Mikiokai, Keahupuaa | 1 house lot |

| LCA | Ahupua'a | 'Ili (listed west to east) | Contents of Award |
|--|----------|---|--|
| 7260:2 | Waikele | Kaoli pea | 'ili of Waikele and Kaoli pea (291.58 acres) to Bennett Namakeha |
| 1712-C:2 | Waikele | Kapuna, Keahupuaa° | 1 house lot and garden |
| 10512 | Waipi'o | Kauaka | 3 lo'i |
| 1685:1 | Waipi'o | Kapaia, Waikaka | 3 taro patches (<i>lo'i</i>) and 1 pasture (<i>kula</i>) |
| 8241 L.K.:2 | Waipi'o | Hanaupouli | 5 lo'i |
| 8241 S.S.:2 | Waipi'o | Hanapouli, Kahaole | (0.73-acre) lot |
| 10613:4 | Waipi'o | | Lands to Abner Pākī (<i>Ali'i</i> Award) |
| 4213:1 and 4213:2 | Waiawa | Holoipiapia, Kahoai ai, Kapuaihalulu, Kalona | 3 lo'i and 1 kula, ½ house lot |
| 4529 and 2685 | Waiawa | Holoipiapia, Kapuaihalulu | 1 house lot, 6 lo'i, 1 'auwai, and 1 steep banana plantation |
| 904:3 | Waiawa | Panio, Kahoai ai, Kuhia | 1 house lot (3 houses), 1 lo'i, and 2 fishponds |
| 5591 and 9357:1 | Waiawa | Kahoeae; Panaio | 5 lo'i and 1 kula |
| 9294 | Waiawa | Piliaumoa | 1 house lot |
| 9368:1; 1604 | Waiawa | Kuhiawaho | 3 taro patches (<i>lo'i</i>) and 1 pasture (<i>kula</i>) |
| 10942:1, 10942:2, 10942:3, and 10942:4 | Waiawa | Kahoai ai | 1 house lot (1 house) and 8 lo'i to William Wallace |

tunnels connecting with 37 stream intakes on the north side of the Ko'olau; the main bore through Waiāhole Valley; 14 tunnels on the southern side of the Ko'olau at Waiawa; and a ditch extending westward to Honouliuli (Condé and Best 1973:37). Upon its completion in 1916, the Waiahole Ditch was 21.9 miles long (35 kilometers) and cost \$2.3 million to construct. The 32 million gallons of daily water enabled the Oahu Sugar Company to grow to “some 20 square miles...ranging in elevation from 10 feet at the Waipio Peninsula...to 700 feet at the Waiahole Ditch” (Condé and Best 1973:313). The ditch system, with some modifications, remains in use.

The Waiahole Ditch passed through Hō'ae'ae, bringing much needed water to the area:

West of Waikakalaua Gulch, through Hoaeae and to the upper boundary of Oahu Plantation in Honouliuli, the conduit consists of 12,650 feet of cement-lined ditches, and three redwood pipes 5 feet in diameter, having an aggregate length of 2,830 feet. [Kluegel 1917:96]

The Waiahole Water Co. has taken over from the Oahu Sugar Co. the Ahrens Ditch in Waiawa, the Kipapa Ditch, the Waikakalaua Ditch in Waipio, and the Hoaeae Ditch. Two redwood pipes having a total length of 1,223 feet have been laid across two gulches on the line of Hoaeae Ditch, cutting out 2 ¼ miles of ditch. The water delivered by the Waiahole System is chiefly used on newly planted cane on land above the lift of the pumps. [Kluegel 1917:107]

3.2.3.5 Other Agricultural Enterprises

As the sugar industry throughout the Hawaiian kingdom expanded in the second half of the 19th century, the need for increased numbers of field laborers prompted passage of contract labor laws. In 1852, the first Chinese contract laborers arrived in the islands. Contracts were for five years, and pay was \$3 a month plus room and board. Upon completion of their contracts, a number of the immigrants remained in the islands, many becoming merchants or rice farmers. As was happening in other locales in the 1880s, groups of Chinese began leasing and buying — from the Hawaiians of Waikele and Waipi'o *ahupua'a* — former taro lands for conversion to rice farming. The taro lands' availability throughout the islands in the late 1800s reflected the declining demand for taro as the native Hawaiian population diminished.

The Hawaiian Islands were well-positioned for rice cultivation. A market for rice in California had developed as increasing numbers of Chinese laborers immigrated there since the mid-19th century. Similarly, as Chinese immigration to the islands also accelerated, a domestic market opened. During the late 1800s, the taro fields of central 'Ewa were converted to rice fields as Chinese immigrants began to lease and purchase 'Ewa lands. By 1892, there were 333 acres of land devoted to rice farming in Waikele and Waipi'o *ahupua'a* (Coulter and Chun 1937: 21).

By the early decades of the 20th century, rice farming in the Hawaiian Islands was in decline, beset by crop diseases and cheaper prices for mainland-grown rice. Commercial agriculture in Waikele became dominated by sugar with the development of the Oahu Sugar Company. The company imposed a new name on the area of its focus when, in 1897, its board of directors decided that “the name of the mill site and office of the company should be ‘Waipahu’” (Nedbalek 1984:13).

As in Honouliuli, the cultivation of sisal was attempted on arid lands. Thrum's *Hawaiian Almanac and Annual* speaks of the prospect of sisal cultivation glowingly from 1904 to 1913, but the greater profits to be made from sugar cane cultivation eventually led to the decline of this industry. Upper Hō'ae'ae seems to have been the focus of sisal cultivation in central 'Ewa, as shown in excerpts from the 1909 and 1913 annuals:

The Hawaiian Fiber Co. increases its capital stock to \$150,000, over 500 acres of new planting having been set out on their recently acquired Hoaeae land, and work being pushed to cover the entire tract of some 1,800 acres. [Thrum 1909:167]

New and enlarged machinery for the sisal decorticating mill has been installed at the Pouhala station of the company on the upper Hoaeae lands, with which to care for the fibre product from their enlarging area. Some 1,750 acres are now planted out, including the fields of Sisal. [Thrum 1913:170-171]

An attempt to grow cotton was made on "the semiarid uplands at Kunia and Waipahu" in the early 20th century, but the enterprise was not profitable (Krause 1911:66).

John Papa 'Ī'ī associated Waiawa with the brewing of intoxicants in the early 1800s, and gives an account of the making of 'ōkolehao, an alcoholic drink made from brewing the roots of the *ti* plant (*Codyline fruticosa*):

It was interesting to see how ti root was converted into a strong liquor. When the root was boiled on a stove, the liquid came forth like the flowing of sweat from a bud. The hand was wetted with the first drippings and then waved over the flames, when the drippings burned brightly. The first brew was called *lolo*, the second *kawai*, and the last *kawai hemo*. ['Ī'ī 1959:85]

Between the years of 1861 and 1873, parcels in Waiawa were leased to Valdemar Knudsen for use as grazing lands for livestock. A fifty-year lease and leaseholds were granted to James Robinson in 1868. After James Robinson's death in 1890, his son, Mark P. Robinson, acquired a twenty-five year lease. Overwritten on the lease was the "permission granted to assign the lease to the Oahu Railway and Land Company" (Bureau of Land Conveyances 115:496). This lease was subleased from Oahu Railway and Land Company to the Oahu Sugar Company for forty-three years on January 1st, 1897. It is probable that much of the upper grasslands of Hō'ae'ae, Waikele, Waipi'o and Waiawa were used for cattle pasture.

In the early decades of the 20th century, lands in *mauka* Waipi'o and Waiawa were being acquired for pineapple cultivation. There is a record of attempted pineapple irrigation utilizing water from shallow wells in Waiawa Gulch in 1893. Prior to 1913, most of the plateaus in Waiawa were planted in pineapple (Goodman and Nees 1991: 59). In 1901, the Hawaiian Pineapple Company obtained 61 acres in Waiawa through public auction. Initially, most pineapple was shipped to California for packing. In an attempt to speed up processing, save money, and produce a fresher product, a pineapple cannery was constructed in Waiawa. This cannery was constructed by the Pearl City Fruit Company, but became a part of the Hawaiian Pineapple Company operations after the Pearl City Fruit Company went bankrupt. The cannery was in operation from 1905 to 1935.

A 1908 lease from the John 'Ī'ī Estate, Ltd. to Yoshisuke Tanimoto and Kintaro Izumi led to the formation of the Waipi'o Pineapple Company, which cleared and cultivated approximately 223 acres in portions of Kīpapa Gulch. In 1909, the government appropriated Waipi'o Peninsula from the 'Ī'ī estate. The land was valued at \$10,000 for purposes of fair compensation (Dept. of Land and Natural Resources Land Record Books 1909:228-235). In 1915, Libby, McNeill & Libby took over Waipi'o Pineapple Company's leases and continued to cultivate pineapple in the area. By the late 1920s, James Dole's Hawaiian Pineapple Company, incorporated in 1901, was cultivating pineapple on thousands of acres leased from the 'Ī'ī estate in the *mauka* area of Waipi'o.

Besides sisal, cotton, and pineapple, other crops were grown in central 'Ewa, such as macadamia nuts:

At Hoaeae, in the Ewa district, is another tract of about six acres on the Robinson estate, reported to be in fine condition...Mr. Grant Bailey, manager of the Hoaeae Ranch, kindly furnishes the following data on the infant industry...“Our planting is about six acres. Apparently one would have to wait about ten years before expecting commercial results on the planting. Our oldest trees are seven years old and they are just now beginning to bear.” [Thrum 1927:96]

3.2.3.6 *The Military in Central 'Ewa*

Early in the 20th century, the U.S. Government began acquiring the coastal lands of 'Ewa for the development of a naval base at Pearl Harbor. In 1901, the U.S. Congress formally ratified the annexation of the Territory of Hawai'i, and the first 1,356 acres of Pearl Harbor land were transferred to U.S. ownership. The U.S. Navy began a preliminary dredging program, which created a 30-foot deep entrance channel, measuring 200 feet wide and 3,085 feet long. In 1908, money was appropriated for five miles of entrance channel dredged to an additional 35 feet down (Downes 1953). In 1909, the government appropriated the entire Waipi'o Peninsula from the 'Ī'ī estate.

By 1941, Pacific Naval Air Bases expenditures for new construction at Pearl Harbor were in the hundreds of millions of dollars. The Japanese attack on Pearl Harbor, December 7, 1941, damaged or destroyed much of the new construction. Reconstruction was instituted to double Pearl Harbor's war capacity. Military planners approved a new ammunition depot in the mountainside of Waipahu, a large new hospital in 'Aiea, and thousands of additional changes to the Navy Yard to accommodate the new aircraft carrier task forces (Woodbury 1946). During World War II, the military used the sugar cane rail system to “haul large quantities of ammunition” (Condé and Best 1973:315). Loko 'Eo was completely drained, filled in, and converted into a “naval reservation.”

After entering World War II, a military reservation was established in the upland regions of Waiawa. The reservation was 650 acres consisting of both gulch and plateau lands. From 1941 to 1945, the reservation was used as a training area for tanks and personnel, and as an artillery impact area. The area was also used for the storage of munitions and supplies. The primary structure built by the military was a communications center. This center consisted of four buildings and a tunnel system. The communications center is currently being used by the State of Hawai'i as a minimum security prison (Waiawa Correctional Facility).

3.2.3.7 From Rural Farms to Modern Urban Development

During the second half of the 20th century, growth in central 'Ewa focused on the development of residential and military expansion, especially near Pearl Harbor. A series of U.S. Geographic Survey maps (taken over by the military during wartime), shows the increasing urban development surrounding the corridor from 1917 to 1970. On a 1919 map (Figure 26), the area was still rural, crossed only by the tracks of the OR&L railway and plantation rail lines. The main population center was around the mill town of Waipahu in Waikele Ahupua'a. On the 1927 (Figure 27) and 1943 maps (Figure 28), Waipahu had expanded; marshy areas (former taro lands) were still indicated in the *ahupua'a* of Waiawa. On the 1943 map (Figure 29), Waipahu town had expanded from Waikele into Waipi'o. A 1970 aerial photograph (Figure 30) indicates urban development along the complete extent of the HHCTCP alignment.

3.3 Previous Archaeological Research

While the southwest corner of the Island of O'ahu is arguably one of the most studied areas in Polynesia, the HHCTCP Construction Phase I project area is environmentally distant from the focus of most of this previous work (particularly the Barbers Point or Kalaeloa area). It is suggested that an in-depth analysis of the results of the previous archaeology of the Honouliuli *ahupua'a* would do little to elucidate the present project lands. The following discussion focuses on previous archaeological projects that are directly relevant to the lands under study.

Construction Phase I of the HHCTCP traverses two distinct geographic areas. This discussion of previous archaeological research in the vicinity of the project area includes the inland southwestern Honouliuli Ahupua'a lands that were, as a generalization, relatively barren and little used prior to being placed under a century of sugar cane cultivation, and the lands on the margins of Pearl Harbor that were much more intensively used in traditional Hawaiian times and that have continued under fairly intensive habitation to the present time. For the purposes of this discussion, the east/west division between these geographic areas is defined as Kunia Road.

3.3.1 Previous Archaeological Studies West of Kunia Road

The previous archaeological studies in the vicinity of the Construction Phase I project area west of Kunia Road predominantly cover relatively large parcels of land (often hundreds of acres) (Figure 31). It is noteworthy that nearly 100 percent of this western portion of the project area has been studied in prior archaeological studies. The following discussion of previous archaeological studies generally proceeds from west to east along the project corridor.

Spear 1996

In 1996, Scientific Consultant Services, Inc. conducted an archaeological reconnaissance and assessment of the East Kapolei Development Project, *makai* (seaward) of the H-1 Freeway, in the vicinity of the North-South Road corridor, and including portions of Kalo'i and Hunehune Gulches. This brief letter report addresses approximately 1,300 acres, including: approximately 1.4 miles of the project corridor; the East Kapolei Station and park and ride facility; and the U.H. West O'ahu Station and northern park and ride facility. The study cites a 1994 SHPD letter (Doc

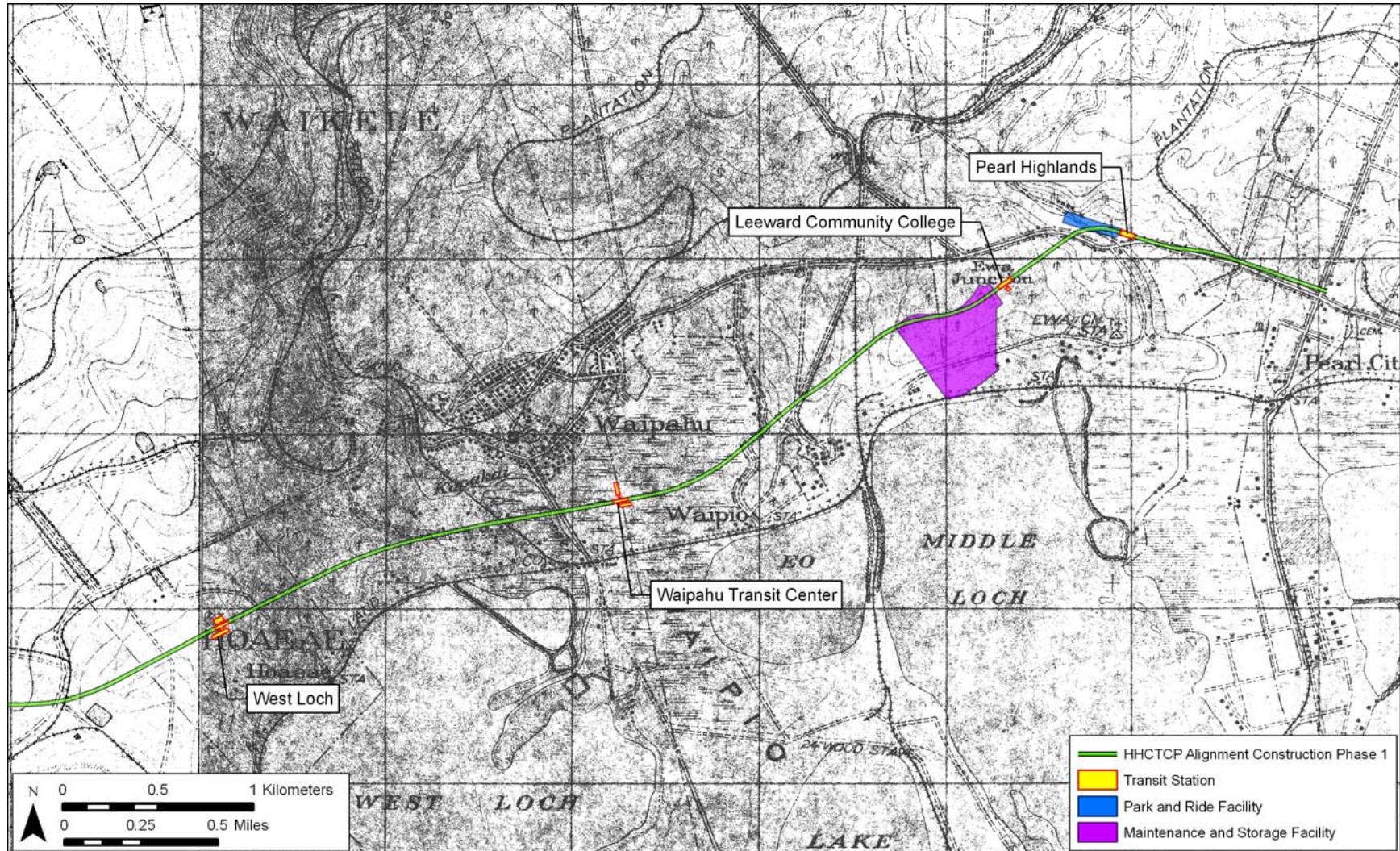


Figure 26. 1919 War Department Fire Control Map, Nanakuli and Pearl Harbor Quadrangles, showing the location of the eastern portion of the Construction Phase I project area

Archaeological Inventory Survey, HHCTCP Construction Phase I, Honouliuli, Hō'ae'ae, Waikele, Waipi'o, and Waiawa Ahupua'a, 'Ewa District, Island of O'ahu

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TMK: [1] 9-1, 9-4, 9-6, 9-7 (various plats and parcels)

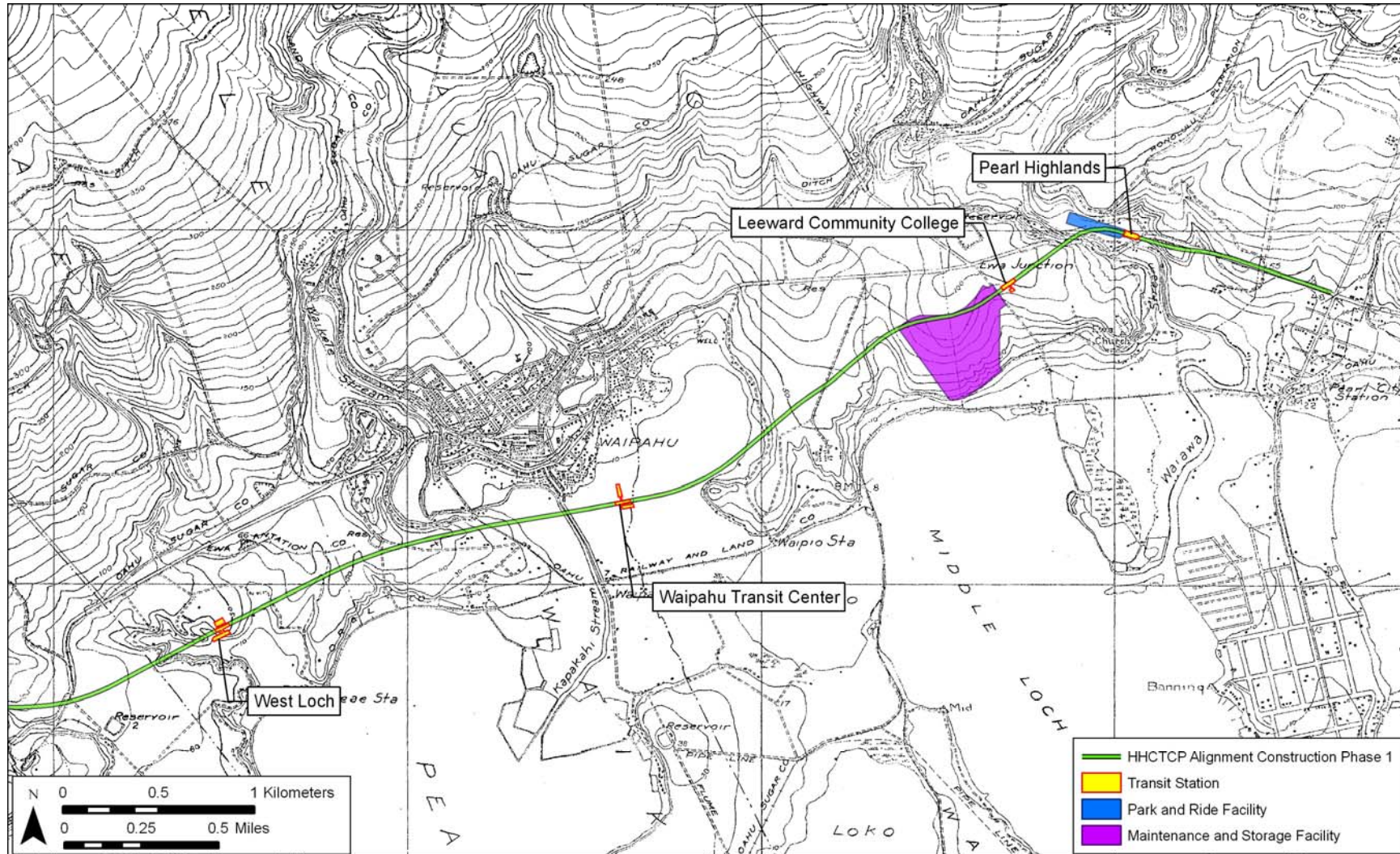


Figure 27. 1927-1928 U.S. Geological Survey Topographic Map, Waipahu Quadrangle, showing the location of the eastern portion of the Construction Phase I project area

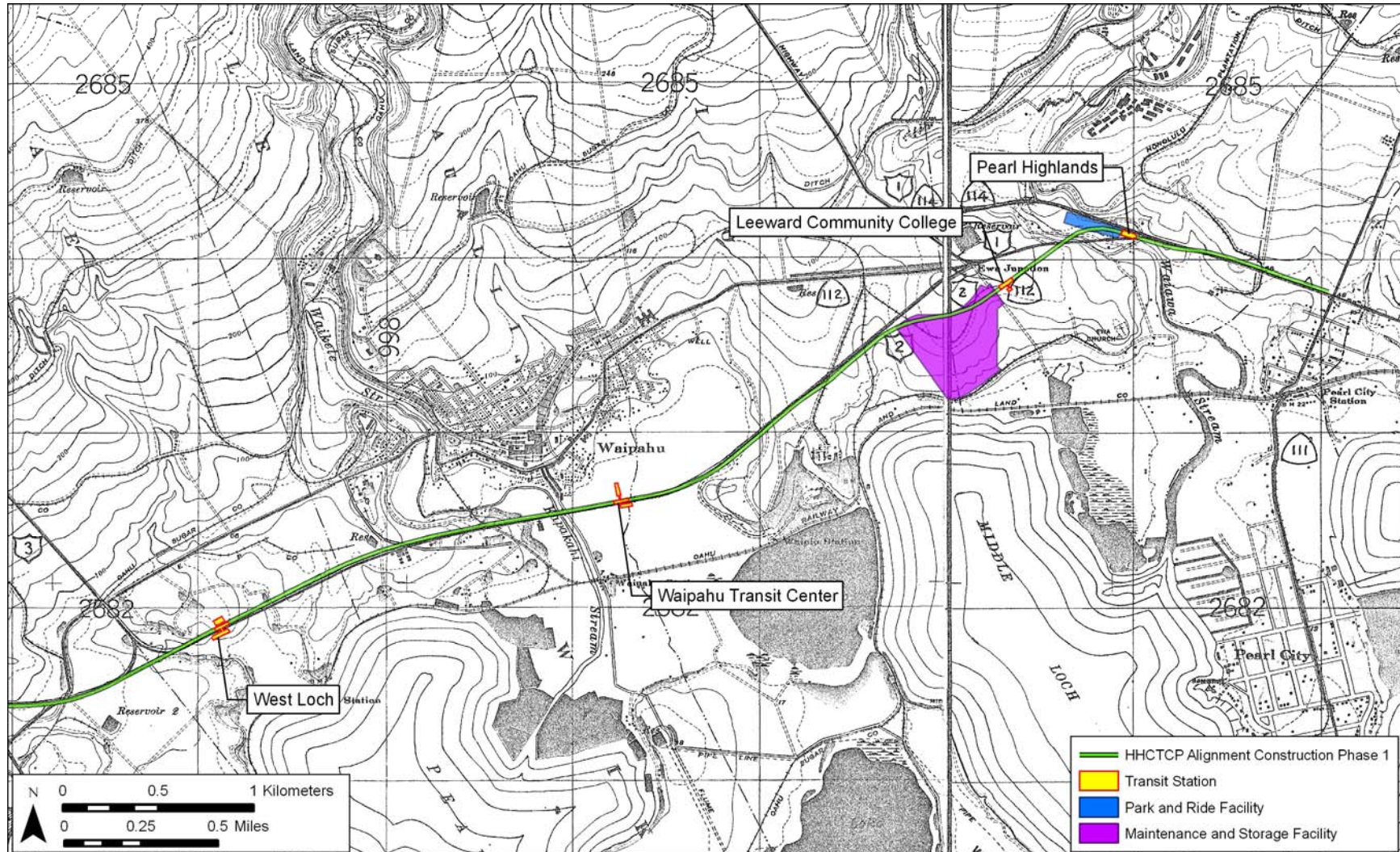


Figure 28. 1943 War Department Topographic Map, Aiea and Waipahu Quadrangles, showing the location of the eastern portion of the Construction Phase I project area

Archaeological Inventory Survey, HHCTCP Construction Phase I, Honouliuli, Hō'ae'ae, Waikele, Waipi'o, and Waiawa Ahupua'a, 'Ewa District, Island of O'ahu

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TMK: [1] 9-1, 9-4, 9-6, 9-7 (various plats and parcels)

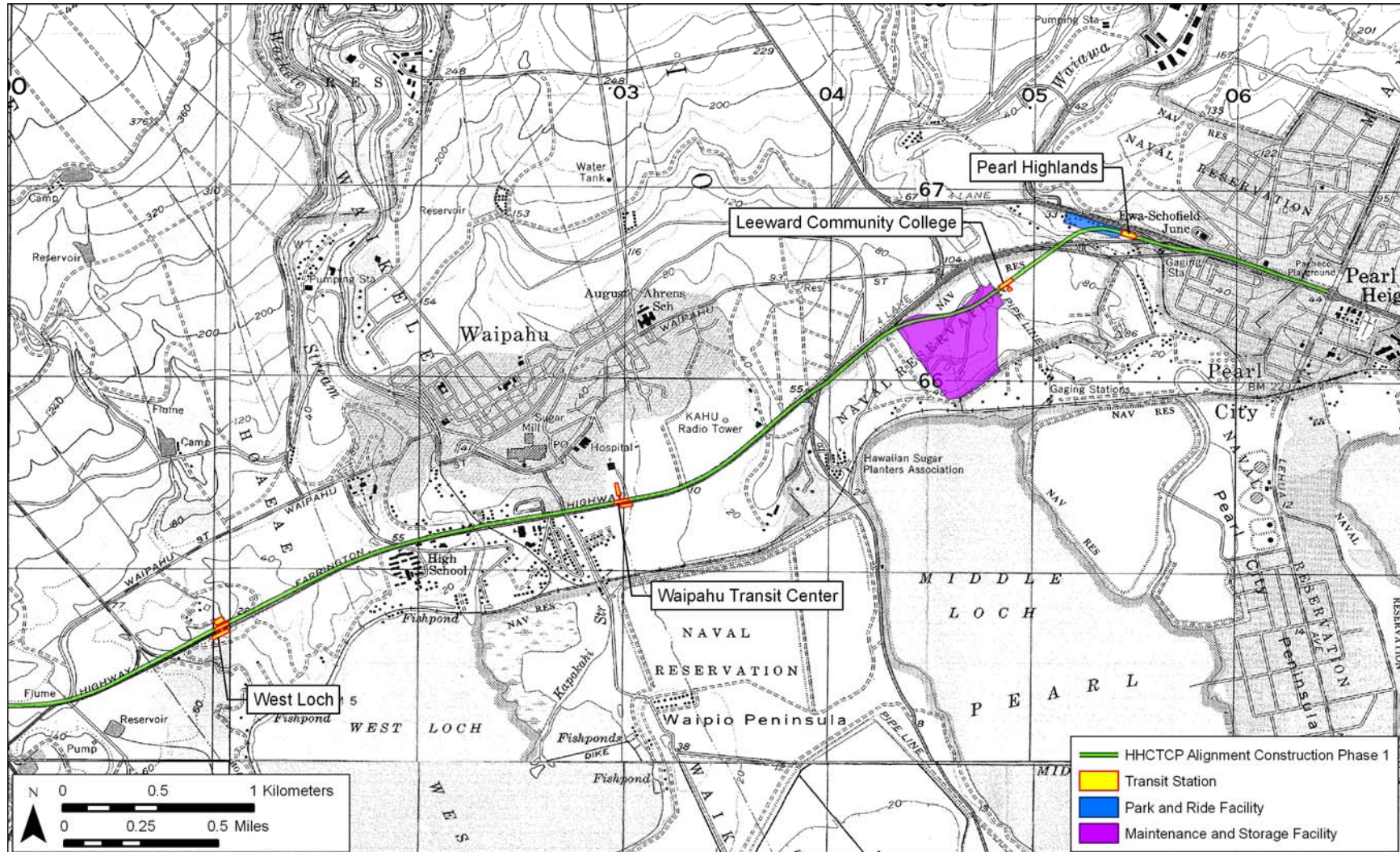


Figure 29. 1953 Army Mapping Service Topographic Map, Schofield Barracks and Waipahu Quadrangles, showing the location of the eastern portion of the Construction Phase I project area

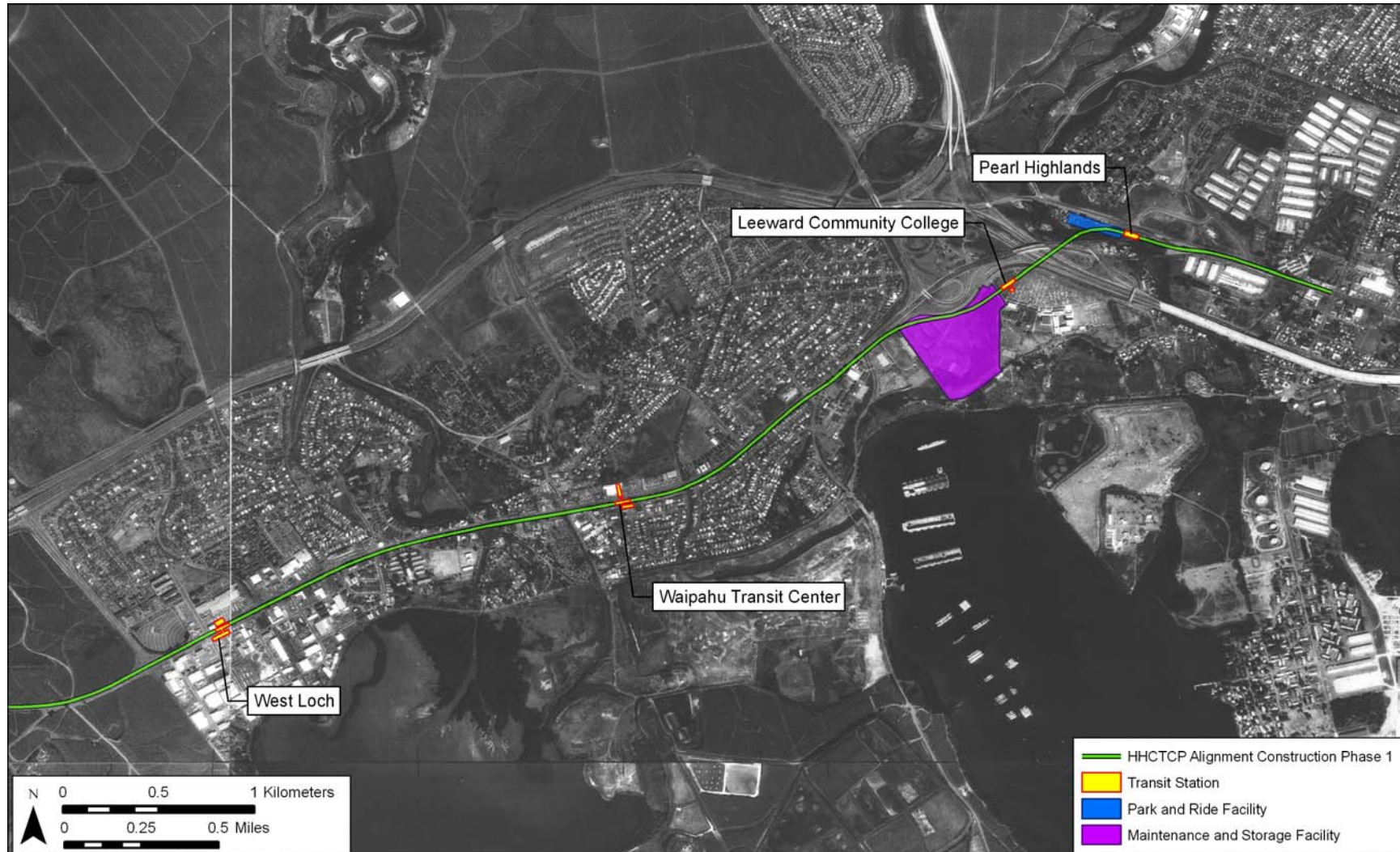


Figure 30. 1977 U.S. Geological Survey Orthophotograph, Schofield Barracks and Waipahu Quadrangles, showing the location of the eastern portion of the Construction Phase I project area

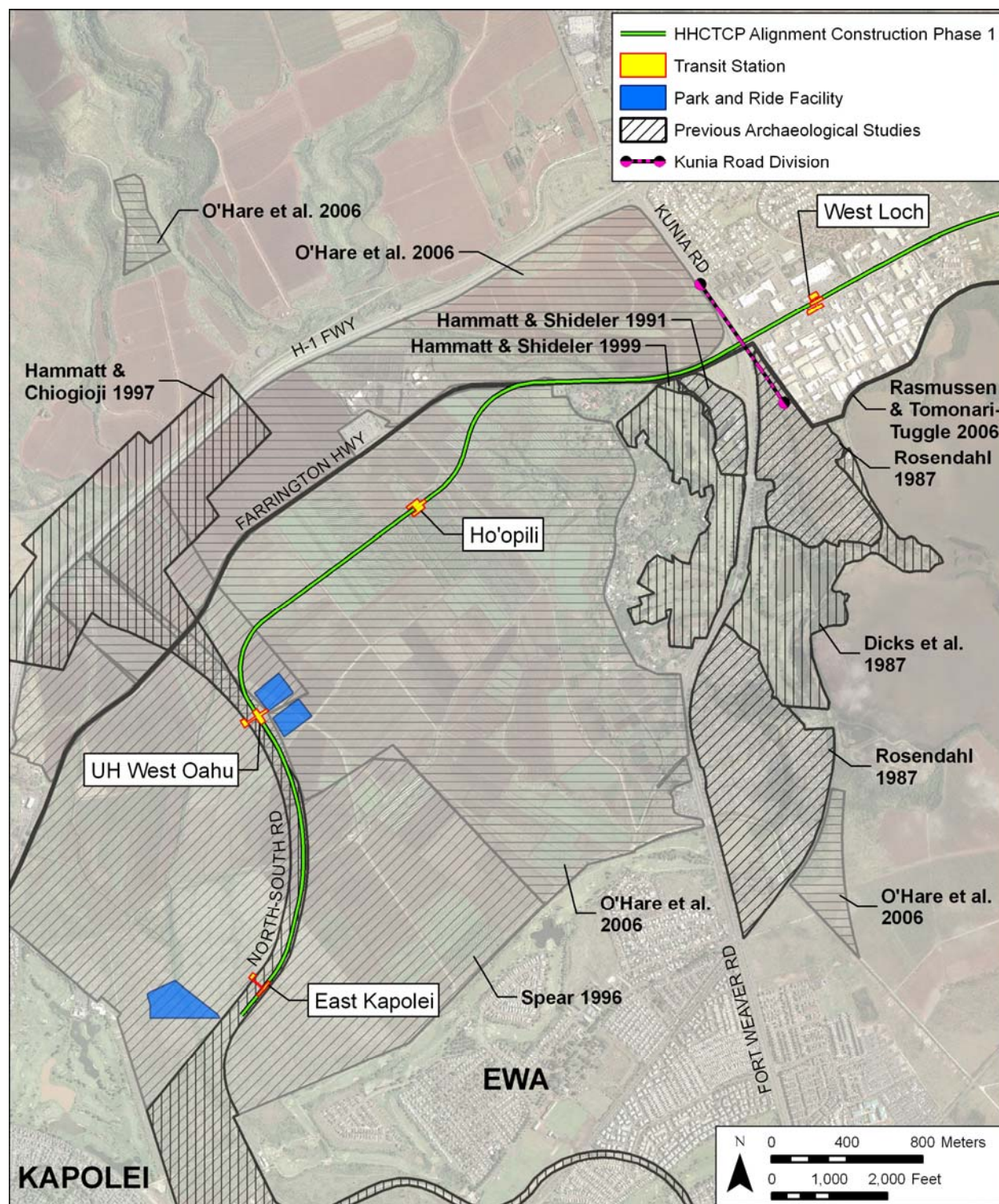


Figure 31. Aerial photograph (source: U.S. Geological Survey Orthoimagery 2005) showing the locations of previous archaeological studies in the vicinity of the western portion of the Construction Phase I project area

No 9408TD01) that “clearly indicates that most of the present [Spear 1996] project area has been declared to have “no effect” on historic sites due to the many years of commercial sugarcane production on these lands.”

A limited field inspection documented in the Spear (1996) letter report did not identify any historic properties, but noted that the 4 m wide and 4 m deep Kalo'i and Hunehune Gulches had been modified for cane irrigation. The study concluded that, on the basis of the SHPD letter and the field inspection, “that future development on these land parcels will have ‘no effect’ on historic sites, and that no further cultural resource work is required” (Spear 1996:1). While it is unclear whether there was a formal SHPD response to the Spear (1996) letter report, the conclusions seem reasonable.

Hammatt and Chiogioji 1997a and 1997b

In 1997, Cultural Surveys Hawai'i, Inc. conducted two similar archaeological reconnaissance surveys of a corridor that would become the “North-South Road” project, extending south from the H-1 Freeway. The earlier study (Hammatt and Chiogioji 1997a) extended south to approximately 5,300 feet inland of the 'Ewa Beach shoreline. The later study (Hammatt and Chiogioji 1997b) was shorter in length, not extending south of the Oahu Railway and Land Company (O.R. & L.) right-of-way. For the purposes of this discussion relating to the Construction Phase I project area, the two Hammatt and Chiogioji 1997 studies are essentially identical, with both studies addressing approximately 1.2 miles of the project corridor, including the East Kapolei and U.H. West O'ahu Stations. It is unclear whether either of these studies was commented on by the SHPD. A letter signed by Dr. Don Hibbard, SHPD Administrator, dated March 8, 1996 (Log No 16697, Doc No 9603NN03) on the subject of the “North-South Road Corridor Project” only expresses concern for appropriate mitigation of impact to the O.R. & L. right-of-way.

Background research and a pedestrian survey for the Hammatt and Chiogioji 1997 studies revealed that the entire area had been extensively graded in association with sugar cane cultivation and the construction of plantation infrastructure. The Hammatt and Chiogioji 1997a study corridor crossed two previously identified areas of archaeological concern (both well south of the current project area): SIHP # 50-80-12-9786, consisting of the 'Ewa Villages Historic District; and SIHP # 50-80-12-9714, the Oahu Railway and Land Company (O.R. & L.) right-of-way. These historic properties were not located in the vicinity of the Hammatt and Chiogioji 1997b study area. The Hammatt and Chiogioji 1997b study concluded: “No further archaeological investigation is recommended for the entire project area corridor and on-site or on-call monitoring is not justified during future construction activities” (Hammatt and Chiogioji 1997b:22).

Despite the recommendation cited above, the construction of the North-South Road project has been subjected to on-call archaeological monitoring programs by Cultural Surveys Hawai'i Inc. There have been no significant finds to date.

O'Hare et al. 2006

In 2006, Cultural Surveys Hawai'i, Inc. conducted an archaeological inventory survey of approximately 1,600 acres for the East Kapolei Project (subsequently known as the Ho'opili Project) (O'Hare et al. 2006). The study was accepted by SHPD in a letter dated November 3, 2006 (Log No. 2006.3670, Doc. No. 0611amj01). The Ho'opili project area was bounded on the east by Fort Weaver Road, *makai* (seaward) by Mango Tree Road, and *mauka* (inland) by the H-1 Freeway. The study area was configured by the owner/developer interests to dove-tail with the Spear (1996) study, with the western boundary of O'Hare et al. (2006) study area following the general configuration of the east side of the Spear (1996) study. A non-contiguous portion of the O'Hare et al. (2006) study area was *mauka* of the H-1 Freeway.

The O'Hare et al. (2006) study area covers approximately 1.2 miles of the Construction Phase I project area, between North-South Road and Farrington Highway, including the Ho'opili Station. The southern of the two U.H. West O'ahu Station park and ride facilities was also covered by the O'Hare et al. (2006) study area. The O'Hare et al. (2006) study area then borders an additional 0.8 miles of the project area from Farrington Highway to Kunia Road.

Several historic properties within the O'Hare et al. (2006) study area were previously identified during an archaeological survey in 1990 (Hammatt and Shideler 1990). These previously identified historic properties included: SIHP # 50-80-12-4344, plantation infrastructure; 50-80-12-4345, railroad berm; 50-80-12-4346, northern pumping station; 50-80-12-4347, central pumping station; and 50-80-12-4348, southern pumping station. Four additional archaeological features were documented by the O'Hare et al. (2006) study. These additional features, grouped under SIHP # 50-80-14-4344, include: Feature D, a linear wall along the east bank of Honouliuli Stream; Feature E, a linear wall along the east bank of Honouliuli Stream; Feature F, a stone-faced berm constructed perpendicular to the orientation of the stream; and Feature G, a concrete ditch and concrete masonry catchment basement on the west bank of Honouliuli Gulch.

No areas of concern were documented in the vicinity of the Construction Phase I project area by the O'Hare et al. (2006) study. While plantation irrigation features of SIHP # 50-80-14-4344 (i.e. Features D through G) were documented north of the Construction Phase I project area, within Honouliuli Gulch, no further work was recommended and there are no preservation concerns (O'Hare et al. 2006:116-117).

Rasmussen and Tomonari-Tuggle 2006

In 2004, archaeological monitoring was conducted along the Waiau Fuel Pipeline corridor, extending from the Hawaiian Electric Company's Barbers Point Tank Farm to the Waiau Generating Station. The Waiau Fuel Pipeline corridor follows Farrington Highway to Kunia Road, angles *makai* (seaward) near Kunia Road, then continues east along the O.R. & L. right of way near the Pearl Harbor coast. It appears that no archaeological monitoring was conducted west of Waipi'o Peninsula, as the corridor to the west had been determined to not be archaeologically sensitive. The eastern portion of the Rasmussen and Tomonari-Tuggle (2006) study area, east of Kunia Road, is discussed further below.

Dicks et al. 1987

In 1987, Paul H. Rosendahl, Inc. conducted an archaeological reconnaissance survey for the West Loch Estates Golf Course and Parks (Dicks et al 1987). The study addressed an approximately 220 acre project area bisected by Fort Weaver Road, extending from the coast of the West Loch of Pearl Harbor to Farrington Highway. The project area included only a very narrow frontage along Farrington Highway near the intersection of old Fort Weaver Road. Given the preparation of the study for inclusion in an EIS, it is assumed that the Dicks et al (1987) study was reviewed and found to be acceptable to allow development to proceed.

While a wealth of archaeological finds were indicated east of Fort Weaver Road, at some remove from Farrington Highway, only one historic property (SIHP # 50-80-13-3321) was documented west of Fort Weaver Road, approximately 140 m south of the Construction Phase I project area. The subsurface cultural layer included a human burial, artifacts, midden, subsurface features, and structural remains. This cultural layer was determined to be of pre-contact origin and may have been occupied as early as the mid-6th to mid-9th centuries, with subsequent occupations occurring up to the early 1800s (Dicks et al. 1987:45-51). SIHP # 50-80-13-3321 relates to a complex of Land Commission Awards that lies in the Honouliuli Stream bottomlands, approximately 80 vertical feet below the Construction Phase I project area at Farrington Highway. Thus, although the historic property is only approximately 140 m south of the transit corridor it is ecologically distant.

Hammatt and Shideler 1999

In 1999, Cultural Surveys Hawai'i, Inc. conducted an archaeological assessment for the proposed expansion of St. Francis Medical Center West, located *makai* of Farrington Highway and west of Fort Weaver Road (Hammatt and Shideler 1999). This study lies adjacent to the Construction Phase I project area along Farrington Highway for approximately 300 feet. The study included a limited field inspection of the study area. No historic properties were identified in the study area. Due to the presence of a subsurface cultural layer (SIHP # 50-80-13-3321) east of the study area, an archaeological inventory survey, with a focus on subsurface testing, was recommended for a portion of the study area prior to any development involving ground disturbance (Hammatt and Shideler 1999).

Hammatt and Shideler 1991

In 1991, Cultural Surveys Hawai'i, Inc. conducted an archaeological inventory survey for a proposed expansion of Saint Francis Medical Center West on an approximately 24-acre parcel *makai* of Farrington Highway and west of Fort Weaver Road (Hammatt and Shideler 1991). This study lies adjacent to the Construction Phase I project area along Farrington Highway for approximately 400 feet. A pedestrian survey and background research revealed that the entire study area, located on a bluff northeast of the flood plain of Honouliuli Stream, had been extensively disturbed, contained no surface structures or other remains, and was unlikely to contain any subsurface historic properties. It is understood that the SHPD rendered a "no effect" letter for this project.

Rosendahl 1987

In 1987, Paul H. Rosendahl, Inc. conducted a combined surface and sub-surface survey of approximately 260 acres in two discontinuous parcels east of Fort Weaver Road. The northern of the two parcels extended *mauka* to the intersection of Fort Weaver Road and Farrington Highway. The main relevance of this study is in documentation of the virtual absence of finds in the vicinity. In the northern parcel, there was one heavily disturbed surface artifact collection area (designated "T-2") relating to a pre-1900 historic habitation, consisting of a scatter of glass and ceramic vessel fragments. This artifact scatter was located approximately 900 m south of the Construction Phase I project area. Given the preparation of the study for inclusion in an EIS, it is assumed that the study was reviewed and found to be acceptable to allow development to proceed.

3.3.2 Previous Archaeological Studies East of Kunia Road

The eastern portion of the Construction Phase I project area primarily consists of the Farrington Highway corridor. The highway, along with much of the built environment around it, was constructed during the 1960s (Voss 2008). Although the highway was built over existing roadways (including the previously mentioned Government Road), the improvements to the roadway led to residential and commercial growth, which occurred before archaeological investigations became standard in the late 1970s. This may explain why there are so few archaeological investigations within the area.

Near Farrington Highway, previous archaeological investigations show varied types of archaeological resources, including traditional Hawaiian remains, plantation infrastructure, and World War II historic infrastructure. Three of the previous archaeological investigations are in the vicinity of the project's vehicle maintenance and storage facility, near the Leeward Community College Station. The discussion of previous archaeological investigations in the vicinity of the eastern portion of the Construction Phase I project area proceeds from west to east. The locations of the previous archaeological studies are shown on Figure 32.

Hammatt and Chiogioji 2000

In 2000, Cultural Surveys Hawai'i, Inc. prepared an archaeological assessment of an approximately 2,600-foot-long portion of Farrington Highway for proposed improvements between Anini Place and Waipahu Depot Road (Hammatt and Chiogioji 2000). Background research indicated that the study area ran along land that was, until the mid-19th century, *lo'i* (irrigated taro fields). Many of the *lo'i* were replaced by rice fields in the 20th century. During the 20th century, the Oahu Sugar Company had been established and Waipahu Town developed around the sugar mill and plantation. The Oahu Railway and Land Company (O.R. & L.) tracks ran perpendicular across Hammatt and Chiogioji's (2000) study area. Background research also indicated the study area includes historic buildings and constructions more than 50 years old. The historic features mentioned in the report include: a railway overpass on the *makai* side of Farrington Highway with a drainage canal bridge constructed in the late 1930s (which had no markings or relation to the O.R. & L.); and the St. Joseph Church and School, also on the *makai* side of Farrington Highway, built in 1940s. St. Joseph Church and School are in-use today, and are not currently listed on either the Hawai'i or National Registers of Historic Places, and do not

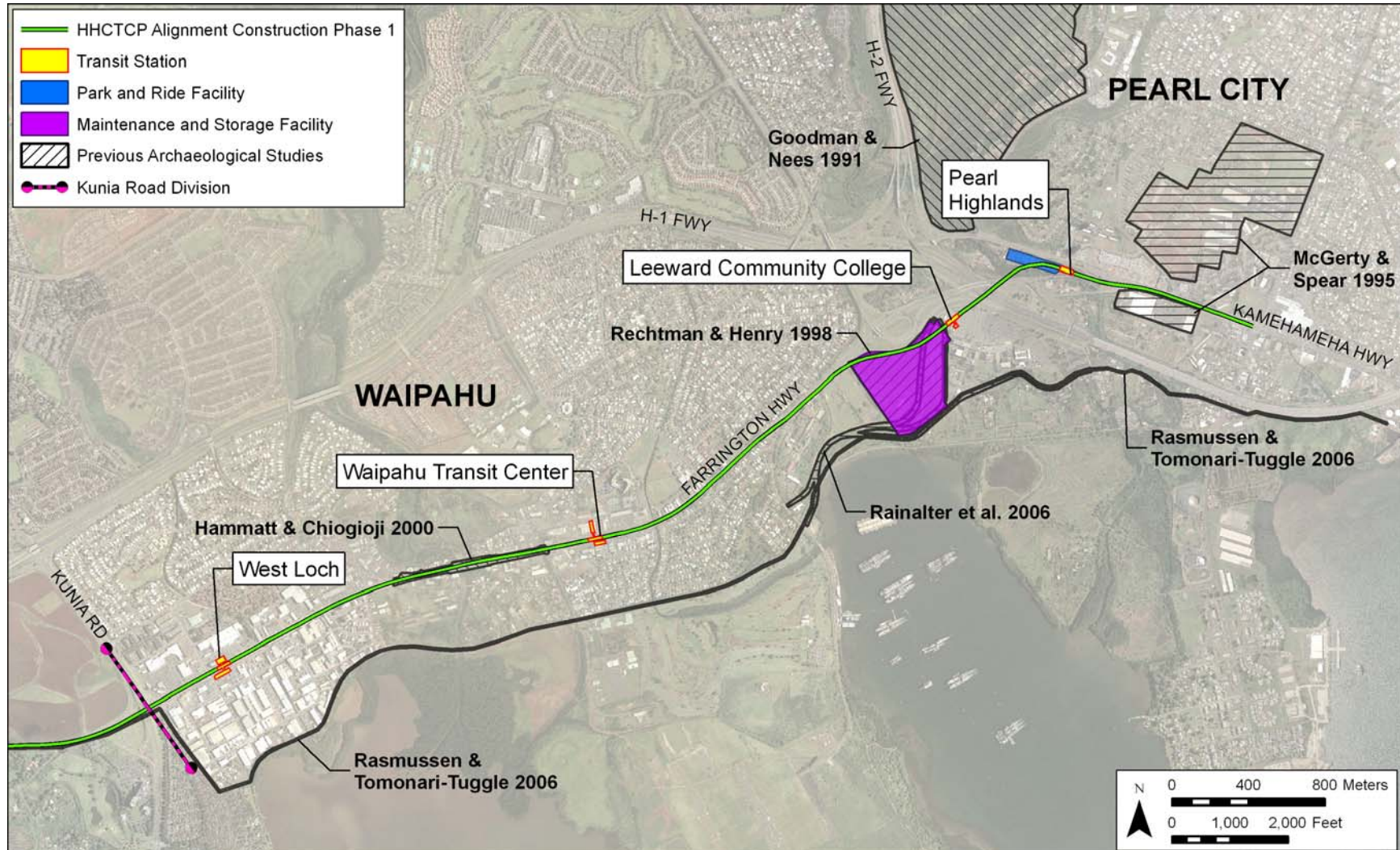


Figure 32. Aerial photograph (source: U.S. Geological Survey Orthoimagery 2005) showing the locations of previous archaeological studies in the vicinity of the eastern portion of the Construction Phase I project area

appear to have been evaluated for Hawai‘i or National Register eligibility. Background research also indicated that no archaeological inventory surveys had been conducted in the vicinity. In addition, no surface historic properties were observed, indicating little likelihood of finding pre-contact surface or subsurface archaeological remains, since all areas along the study area had been subjected to decades of urban development that would have removed any surface remnants related to traditional Hawaiian activities.

Rasmussen and Tomonari-Tuggle 2006

In 2004, archaeological monitoring was conducted along the Waiau Fuel Pipeline corridor from the HECO Barbers Point Tank Farm to the Waiau Generating Station (Rasmussen and Tomonari-Tuggle 2006). The portion of this corridor west of Kunia Road (addressed above) appears not to have been monitored because that portion of the corridor had been determined to not be archaeologically sensitive. East of Kunia Road, the Waiau Fuel Pipeline corridor generally paralleled the O.R. & L. right-of-way, approximately 1,000 feet *makai* (seaward) of the Construction Phase I project area. The Waiau Fuel Pipeline corridor did skirt the south edge of the project’s vehicle maintenance and storage facility, located immediately west of Leeward Community College, and did develop stratigraphic data in that area. The Waiau Fuel Pipeline corridor monitoring south and southeast of Leeward Community College occurred in the vicinity of previously identified traditional Hawaiian burials (SIHP # 50-80-09-3761 and SIHP # 50-80-09-5302) and the fishponds Loko Kuhialoko (SIHP # 50-80-09-0119) and Loko Mo‘o (SIHP # 50-80-09-0120). No new historic properties were discovered however.

Rechtman and Henry 1998

In 1998, PHRI completed an archaeological reconnaissance survey of the ‘Ewa Junction Drum Filling and Fuel Storage Area, *makai* (seaward) of Farrington Highway and immediately west of Leeward Community College (Rechtman and Henry 1998). The ‘Ewa Junction Drum Filling and Fuel Storage Area is the location of the current project’s vehicle maintenance and storage facility. The study was undertaken in compliance with Section 110 of the National Historic Preservation Act (NHPA). “The ‘Ewa Drum Filling and Fuel Storage Area received a 100% surface survey” (Rechtman and Henry 1998:6). No archaeological historic properties were identified in the study area in the course of the fieldwork and it was concluded that: “Due to the amount of prior disturbance and development at both of these facilities it is highly unlikely that any such resources, if they once existed, would have been preserved” (Rechtman and Henry 1998:ii). The study concluded that: “NHPA Section 110 responsibilities with respect to the identification and evaluation of archaeological resources located within these facilities” had been fulfilled.

Rainalter et al. 2006

In 2006, Cultural Surveys Hawai‘i, Inc. conducted an archaeological field inspection and literature search for the construction of a proposed second access road for Leeward Community College (Rainalter et al. 2006). The study area consisted of two corridors extending from Waipi‘o Point Access road, just *mauka* (inland) of the Middle Loch of Pearl Harbor, to the western and southern ends of Leeward Community College. One of the study corridors crossed through the ‘Ewa Drum Filling and Fuel Storage Area, the current project’s vehicle maintenance

and storage facility. Two historic properties were identified within the Rainalter et al. (2006) study area: SIHP # 50-80-09-5302, a burial site containing both coffin and pit burials, located well south of the Construction Phase I project area; and SIHP # 50-80-09-6764, the 'Ewa Junction Drum Filling and Fuel Storage Area, a former U.S. Navy fuel storage facility designed to store automobile gasoline and aviation kerosene in underground storage tanks. The study developed fairly detailed data on the 'Ewa Junction Drum Filling and Fuel Storage Area, and following consultation with the U.S. Navy, concluded: "based on this initial evaluation by the Navy, it is likely that the site would be considered eligible by the Navy for listing on the National Register..." (Rainalter et al. 2006:81).

Goodman and Nees 1991

In 1991, the Bishop Museum conducted an archaeological reconnaissance survey of 3,600 acres in Waiawa Ahupua'a, east of the H-2 Freeway (Goodman and Nees 1991). The southern tip of the Goodman and Nees (1991) study area lies just north (across Kamehameha Highway) of the current project's Pearl Highlands park and ride facility. Seventeen historic properties were documented in the study area (SIHP #s 50-80-09-1469 to 1472 and 2261 to 2273). Four pre-contact historic properties were recorded: a rock-shelter complex, a mound complex, a trail, and a lithic scatter. Post-contact features, including irrigation ditches, a railroad system, and a cannery, and four features associated with World War II military training were also identified. None of these recorded archaeological resources are within or in the vicinity of the Construction Phase I project area.

McGerty and Spear 1995

In 1995, Scientific Consultant Services completed an archaeological assessment for the Department of Housing and Community Project (McGerty and Spear 1995). The study area consisted of 138.5 acres on two parcels in Pearl City, bisected by Kamehameha Highway, west of Waimano Home Road. The southern parcel, of particular interest to the current project, is located immediately *makai* (seaward) of Kamehameha Highway. Background research indicated intensive post-contact agricultural and military use of the study area. Thus, the potential of locating intact archaeological resources has been significantly decreased. No archaeological resources were encountered during this investigation.

3.4 Background Summary and Predictive Model

It has been useful to discuss the Construction Phase I project area as falling into two discrete sections, only slightly arbitrarily divided at Kunia Road, on the basis of the very different pre-contact and post-contact land-use history.

3.4.1 Predictive Model West of Kunia Road

West of Kunia Road there are no commoner Land Commission Awards in the vicinity of the project area, and previous archaeological studies have indicated no concerns in the immediate vicinity of the project area. The distance from the coast (and generally from fresh water) made vicinity of the western portion of the project area a little used area in pre-contact times. The intensive land disturbance of a century of commercial sugar cane cultivation probably removed

most of what little evidence of pre-contact land-use there was. The archaeological sensitivity of this area is generally regarded as low. As the Construction Phase I project area crosses Honouliuli Stream and passes within 300 m of the northern-most extent of the “Honouliuli Taro Lands” the sensitivity is believed to increase somewhat, but is still regarded as low. Even though the distance to the former taro lands is not that far, the bottom lands that were preferred for pre-contact agriculture and habitation near the mouth of Honouliuli Stream seem, in terms of environmental attributes, to have been a world away. Archaeological deposits associated with pre-contact Hawaiian habitation and burial are a remote possibility. Post-contact archaeological deposits are not anticipated in any abundance on the basis of the historic record and the results reported in previous archaeological studies.

3.4.2 Predictive Model East of Kunia Road

East of Kunia Road, the environment changes rather abruptly, a fact that was mirrored in pre-contact settlement patterns and has continued to the present day. The margins of the lochs of Pearl Harbor were proverbially “fat,” “fertile,” and “sweet” (*momona*) lands owing to the availability of marine resources, riparian resources, well-watered bottom lands for *kalo* cultivation and other forms of agriculture, and the generally sheltered conditions. These lands responded rapidly to human endeavor, and the many fish ponds, fish traps, irrigation ditches and ponded fields of the margins of Pearl Harbor undoubtedly supported a relatively large and dense Hawaiian population for a thousand years. As such, the prospect of subsurface deposits relating to traditional Hawaiian habitation, burial, and agriculture having been present in the eastern portion of the Construction Phase I project area is regarded as high. Furthermore, the richness of the margins of Pearl Harbor attracted Hawaiian settlement and later settlement by other ethnic groups throughout the early historic period. The prospect of subsurface deposits relating to post-contact habitation, burial, and agriculture having been present in the eastern portion of the Construction Phase I project area is also regarded as high.

Weighing against this is the absence of reports of significant finds of cultural resources and/or burials in the historic and archaeological record. Undoubtedly this in part reflects the very substantial history of land alteration for transportation, commercial, and residential land uses in the 20th century. It appears likely that the acidity and moisture content of the soil has not been conducive to preservation.

Cultural resources and/or burials relating to both pre-contact and post-contact habitation, and agriculture may be encountered almost anywhere in the eastern portion of the Construction Phase I project area. The likelihood of such finds is suggested to be higher in the vicinity of known Land Commission Awards, streams, and the coast.